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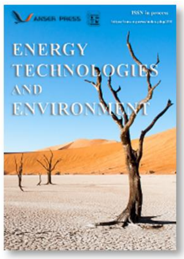

Green transportation taxes and environmental sustainability: China experience

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ABSTRACT

Environmental degradation is becoming a fundamental issue as it is directly associated with human lives and environmental sustainability. This research particularly highlights the significance of green transportation taxes in achieving environmental sustainability due to limited available literature considering the environmental sustainability and green transportation taxes nexus. By employing the newly developed QARDL approach, this study is unfolding the linkages of green transportation taxes on transport-based CO2 emissions for Chinese economy spanning 1992 to 2020. The results infer that green transportation taxes to enhance environmental sustainability in the long-run for the highest quantiles, i.e., 0.70 to 0.95. Though, green transportation taxes enhance environmental sustainability in all quantiles in the short-run. Based on these results, the study suggests that the Chinese government and policymakers should increase green transportation taxes that help in combating CO2 emissions, which ultimately enhances environmental sustainability.

KEYWORDS

Green transportation taxes; Environmental sustainability; China

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1. Introduction

Anthropogenic climate change seriously endangered ecological systems (Nureen et al. 2023b) and economic growth. Scientists agree that human-caused releases of greenhouse gases (GHGs) have had a major role in warming the planet (IPCC, 2007). Among all GHGs emissions, 72% of the contribution comes from CO2 emissions (Nureen et al. 2023a), making it the single most significant contributor to our warming planet. China's fast economic development has made it the world's leading producer of CO2 emissions (Usman et al., 2021). China's overall CO2 emissions reached 29% of world emissions (He et al. 2022) and more than the combined CO2 emissions of the U.S. and 28 nations in the European Union in 2015 as per estimates of Carbon Budget report 2016 (Zhu et al., 2018). Till to 2030, the Chinese authorities have pledged to cut CO2 emissions by 60-65% below their 2005 level (Tian et al., 2017).

Carbon dioxide (CO2) is released when fuels, including charcoal, gas, petroleum, etc., are burned (SU Fang et al. 2023). To a large extent, the transportation sector is seen as a prototypical energy-intensive business that has significantly contributed to China's impressive economic growth in recent decades (Wang et al., 2020). Significant advancement in the transportation sector has led to increased carbon footprints, waste, and resource utilization (Nureen et al. 2023a). China's overall CO2 emanations from energy usage fell by 0.6% in 2015, but CO2 emissions from the transportation sector endure to exhibit an upward trend (Annual Review of Low-Carbon Developing, 2017). In addition, the fast expansion of China's transportation sector is widely held responsible for the country's more severe hazy climate in the past few years (Yan & Crookes, 2009). A few academics also blame China's cars for the country's terrible air quality (Yin et al., 2015). The transportation sector in China faces significant challenges as it tries to adapt to rising energy and environmental costs despite keeping economic development steady (Li et al. 2024).

Several nations, particularly European economies, have implemented a carbon tax as a realistic and cost-effective strategy to decrease CO2 emissions (Xu et al. 2022). What they've seen seems to indicate that carbon taxes are a key factor in cutting carbon (Aydin & Esen, 2018; Lin & Li, 2011; Nong et al., 2021). Using a partial equilibrium framework, (Nakata & Lamont, 2001) analysed how a carbon tax would affect Japan's energy sector. They concluded that the tax would lead to lower CO2 emissions. Carbon taxation was shown to be a feasible strategy for decreasing carbon emissions (Hao et al., 2021). A transportation tax is a viable strategy for lowering traffic congestion and greenhouse gas emissions (Safi et al., 2021). According to research by (Rausch & Reilly, 2012), a green tax could be a "Win-Win-Win" option for the U.S. Carbon taxes are a viable strategy for lowering energy usage and providing better carbon reduction, yet, it has unfavourable effects on national income, industrial activities, consumption, and household well-being (Doğan et al., 2022) . Consequently, tax receipts recovery mechanisms (Liu & Lu, 2015) and acceptable carbon levels were implemented to mitigate the economic costs associated with the green tax (Tong et al., 2022). A paper by (McKibbin et al., 2015) considered the influence of diverging tax expenditures on the overall price of abatement throughout the U.S. economy and the country's fiscal standing. It infers that adopting a green transportation tax to lower capital taxes increased national wealth and short-term employment. Green transportation tax was shown to be a viable policy choice (Shah et al., 2021), who also found that its primary potential consequences could be mitigated by designing the green tax structure prudently and using the fiscal funds collected (Adebayo and Özkan 2024). (Hussain et al., 2022) argued that the green tax's unintended consequences might be mitigated by redirecting the proceeds to lower corporate and individual income tax rates.

As the world's biggest emerging market and carbon producer, China must address greenhouse gas emissions reduction and implement a fair carbon price for the transportation sector (Nguyen-Thi-Lan et al. 2021). China relies heavily on fossil fuels and electricity to power its transportation network (Song et al. 2022). Purified liquid fuels such as 'gasoline, diesel, kerosene (Adebayo and Alola 2023), and fuel oil' fall under the umbrella term oil (Akram et al. 2023). In the past few years, transportation's share of the economy's overall energy demand has increased faster than any other sector (Wang et al. 2023). Currently, the increase in transportation sector energy demand has outpaced the increase rate of overall energy demand (Adebayo and Kirikkaleli 2021).

In light of aforementioned discussion, this research conducts to assess the green transportation taxes and Chinese environmental sustainability. Till to date, this is the inaugural research to observe the nexus of Road transport-related tax revenue as proxy of green transportation taxes and CO2 emissions from transport as proxy of environmental sustainability for Chinese economy. The QARDL approach applied to compute the both the short- and long-run estimates across multiple quantiles to achieve this goal while prior researches only have considered the long-run estimates (Cho et al., 2015). As a bonus, this research contributes to the existing body of knowledge in empirical and theoretical contexts. Finally, we may use the findings from this study to provide policy suggestions for relevant stakeholders.

2. Model and empirical methodology

The QARDL technique applied to compute the both asymmetries short-run and long-run dynamics (Cho et al., 2015). It is prevailing technique over linear models having following edges; i) it considers the locational asymmetries factors and conditional findings of dependent variable as resulted as more appropriate approach over linear models, ii) It considers quantile ranges for both long and short-run dynamics, iii) It detects the quantiles time-varying reliability of variables. Hence, the sdudies of (Lin & Li, 2011; Solaymani, 2019) provides a conceptual model to compute linakege of green transportation taxes and transport sector CO2 emissions as follows:

$$\mathbf{TCO2_t = \mu + \sum_{i=1}^{n1} \sigma_{TCO2_i} TCO2_{t-i} + \sum_{i=0}^{n2} \sigma_{GTT_i} GTT_{t-i} + \sum_{i=0}^{n3} \sigma_{GDP_i} GDP_{t-i} + \sum_{i=0}^{n4} \sigma_{TEC_i} TEC_{t-i} + \sum_{i=0}^{n5} \sigma_{UP_i} UP_{t-i} + \varepsilon_t} \quad (1)$$

Where $\boldsymbol{\varepsilon_t}$ is rationalised as TCO2t -E[TCO2t/Ft − 1] with Ft – 1 is the smallest σ – field made by (GTTt, GDPt, TECt, UPt, GTTt-1, GDPt-1, TECt-1, UPt-1}, and the lag orders indicates with n1….n5, respectively. Eq. (1) infers that green transportation taxes, GDP per capita, transport sector energy consumption, and urban population are represented by GTTt, GDPt, TECt, UPt, respectively, while TCO2t represents transport sector CO2 emissions. Following (Cho et al., 2015) approach, the QARDL formate of of Eq. (1) as;

$$\mathbf{Q_{TCO2_t} = \mu(\tau) + \sum_{i=1}^{n1} \sigma_{TCO2_i}(\tau) TCO2_{t-i} + \sum_{i=0}^{n2} \sigma_{GTT_i}(\tau) GTT_{t-i} + \sum_{i=0}^{n3} \sigma_{GDP_i}(\tau) GDP_{t-i} + \sum_{i=0}^{n4} \sigma_{TEC_i}(\tau) TEC_{t-i} + \sum_{i=0}^{n5} \sigma_{UP_i}(\tau) UP_{t-i} + \varepsilon_t(\tau)} \quad (2)$$

Where εt(τ) = TCO2t – QTCO2t(τ/Ft −1) and QTCO2t(τ/Ft − 1) and 0 > $\boldsymbol{\tau}$ < 1 represent level of quantile. Eq. 3 shows the QARDL model aftering incorporating the serial correlation.

$$\mathbf{Q}_{\Delta TCO2_t} = \mu + \rho TCO2_{t-1} + \pi_{GTT} GTT_{t-1} + \pi_{GDP} GDP_{t-1} + \pi_{TEC} TEC_{t-1} + \pi_{UP} UP_{t-1} + \sum_{i=1}^{n1} \chi_{TCO2_i} \Delta TCO2_{t-i} + \sum_{i=0}^{n2} \chi_{GTT_i} \Delta GTT_{t-i} + \sum_{i=0}^{n3} \chi_{GDP_i} \Delta GDP_{t-i} + \sum_{i=0}^{n4} \chi_{TEC_i} \Delta TEC_{t-i} + \sum_{i=0}^{n5} \chi_{UP_i} \Delta UP_{t-i} + \varepsilon_t(\tau) \quad (3)$$

Eq. (4) reflects the QARDL-ECM format of Eq. (3) to side-step previous correlations through the projection of ε_t on ΔGTTt, ΔGDPt, ΔTECt, and ΔUPt with the form εt = σ_{GTT}ΔGTTt+ σ_{GDP}ΔGDPt +σ_{TEC}ΔTECt +σ_{UP}ΔUPt + υt. As a result, the εt is no more correlated with ΔGTTt, ΔGDPt, ΔTECt, and ΔUPt. The QARDL-ECM version of the model is:

$$\mathbf{Q}_{\Delta TCO2_t} = \mu(\tau) + \rho(\tau)(TCO2_{t-1} - \pi_{GTT}(\tau) GTT_{t-1} - \pi_{GDP}(\tau) GDP_{t-1} - \pi_{TEC}(\tau) TEC_{t-1} - \pi_{UP}(\tau) UP_{t-1}) + \sum_{i=1}^{n1} \chi_{TCO2_i}(\tau) \Delta TCO2_{t-i} + \sum_{i=0}^{n2} \chi_{GTT_i}(\tau) \Delta GTT_{t-i} + \sum_{i=0}^{n3} \chi_{GDP_i}(\tau) \Delta GDP_{t-i} + \sum_{i=0}^{n4} \chi_{TEC_i}(\tau) \Delta TEC_{t-i} + \sum_{i=0}^{n5} \chi_{UP_i}(\tau) \Delta UP_{t-i} + \varepsilon_t(\tau) \quad (4)$$

$\chi^* \sum_{j=1}^{n} \chi_j$ assesses the lag cumulative short-run effect of transport sector CO2 emissions. While, $\pi_{GTT} *= -\frac{\pi GTT}{p}, \pi_{GDP} *= -\frac{\pi GDP}{p}, \pi_{TEC} *= -\frac{\pi TEC}{p}, \pi_{UP} *= -\frac{\pi UP}{p}$ assess the cointegration among the long-run variables. Eq. (4) estimates (ρ) connected to the transport sector CO2 emissions parameter must be significantly negative. Through the Wald test, we have tested the short and long-run nonlinear influences of GTT, GDP, TEC, and UP on TCO2.

3. Data

Table A contains detailed information about the concerned variables regarding definitions and data sources. Environmental sustainability is the dependent variable in this study, measured through carbon emissions from transport sources as % of total fuel consumption (TCO2). Green transportation taxes are measured by tax revenue related to road transport as % of total environmental tax revenue. The OECD database used to retirved dataset of TEC, TCO2 and GTT. While the dataset of GDP per capita and UP collected from World Bank.

Table 1. Results of descriptive statistics.

	Mean	Median	Max	Min	Std. Dev.	Skewness	Kurtosis	Jarque-Bera	Prob.
TCO2	7.591	7.873	9.565	4.877	1.398	-0.569	2.162	2.414	0.299
GTT	2.853	3.399	4.738	0.250	1.235	-0.689	2.133	3.199	0.202
GDP	8.016	8.027	9.199	6.788	0.721	-0.058	1.716	2.008	0.366
TEC	11.14	11.20	16.63	4.942	3.429	-0.349	2.279	1.217	0.544
UP	3.761	3.781	4.167	3.339	0.247	-0.131	1.767	1.921	0.383

Before performing a regression exercise, it is important to explore the variables' descriptive statistics. Table 2 summarizes the descriptive statistics for TCO2, GTT, GDP, ECT, and UP. The null hypothesis regarding normality distribution is rejected, as depicted by the findings of the J-B test. All the variables have a negative tail, as shown by the estimates of the skewness test. Table 2 reports positive mean values for all concerned variables. The mean and S.D values are reported as: for TCO2 (mean = 7.591, S.D = 1.398), for GTT (mean = 2.853, S.D = 1.235), for GDP (mean = 8.016, S.D = 0.721), for ECT (mean = 11.14, S.D = 3.429), and for UP (mean = 3.761, S.D = 0.247).

4. Computed Estimates and Discussion

The mix order of integration as prerequisite needed to be implemented the QARDL technique. To explore the stationarity characteristics of variables, our study gets assistance from three-unit root tests. These tests include the ADF test, the PP test, and the ZA test. The results for these three-unit root tests are provided in Table 3. The major advantage of the ZA test is that it provides information about the break date in each data series. All three-unit root tests report similar order of integration for data series. It is shown that TCO2, GTT, GDP, and TEC series are I(0) stationary and only the UP series is I(1) stationary. Hence, after satisfying all preliminary conditions, our study can apply the QARDL approach for the regression task.

Table 2. Results of unit-root tests.

	ADF		PP		ZA			
	I(0)	I(1)	I(0)	I(1)	I(0)	Break date	I(1)	Break date
TCO2	-2.452	-3.456*	-0.912	-5.625***	-3.512	1995 Q2	-4.652**	1994 Q1
GTT	-0.102	-2.647*	-1.158	-2.875*	-1.658	2019 Q2	-4.562**	2001 Q1
GDP	-1.203	-2.805*	-0.365	-2.895**	-1.325	2019 Q2	-4.325*	2010 Q2
TEC	-0.475	-2.674*	-0.701	-3.724***	-3.524	1995 Q2	-4.365*	1994 Q3
UP	-2.754*		-3.012**		-4.325*			

Table 3 demonstrated the short-run, and long-run dynamics having ECM statistically significant and negative at all intensities from QARDL estimates. It concluded a long run linkage among GTT and TCO2 having significant and negative at quantiles 0.70 to 0.95, describing that GTT reduces TCO2 at these quantiles in the long-run. However, the association between GTT and TCO2 is observed to be statistically insignificant at lower and medium quantiles, i.e., 0.05 to 0.60.

Green transportation tax positively enhances environmental sustainability by reducing CO2 emissions. Carbon taxation is an important policy tool that can efficiently reduce CO2 emissions (Li et al. 2018). Gupta (2016) reported that transportation taxes effectively reduce traffic pressure and combat CO2 emissions. In support, (Rausch & Reilly, 2012) argue that the carbon tax plays the role of a "Win–Win–Win" solution to control carbon emissions in the US. Implementing transportation taxes is considered the best solution for combatting carbon emissions and controlling energy consumption, which also negatively impacts the welfare and consumption of households, investment, and GDP (Hussain et al., 2022; Shahzad, 2020). (Yuelan et al., 2019) reported that various environmental taxes help internalize negative externalities that help reduce carbon emissions. These taxes are imposed on pollution, transport, and energy sector. Thus, the study suggests that transformation from an energy-based method to a distance-oriented transportation tax provides an effective and stable tax base in the transportation sector in the long-term. Similarly, (Potter & Parkhurst, 2005) denoted that transportation taxation is a fundamental strategy that effectively helps reduce environmental pollution and climate degradation.

In all quantiles, GDP enriches the TCO2 and it infers that an upsurge in GDP reports a detrimental effect on environmental sustainability as it enhances TCO2 at all intensities of GDP. While, ECT parameter concluded a divergence in all quantiles except 0.05. It depicts that at all intensities of ECT (except 0.05), an upsurge in ECT significantly intensifies TCO2 in the long-run. It describes that ECT negatively influences environmental sustainability in China as it escalates TCO2 at all intensities of ECT (except 0.05) in the long-run. The estimates of UP are found to be significant and positive at all intensities in the long-run. It demonstrates that at all intensities of UP, an escalation in UP enhances TCO2 in China, describing that increase in UP reports a harmful impact on environmental sustainability. The long-run dynamics in the QARDL model summarize that only GTT is a significant determinant of environmental sustainability, whereas GDP, ECT, and UP bring detrimental influence on environmental sustainability.

GTT and GDP estimates infer an adverse impact and positive impact in short-run for all quantiles, defining that GTT reduces and GDP arises the TCO2 in the short-run, respectively. Estimates of ECT are found to be significantly positive at all quantiles. It depicts that an upsurge in ECT significantly enhances TCO2 in the short-run. UP estimates are found significant and positive at all quantiles in the short-run. It demonstrates that an escalation in UP enhances TCO2 in China. Likewise, long-run and short-run dynamics also portray that GTT enhances environmental sustainability, but GDP, ECT, and UP decline environmental sustainability in China.

Wald test estimates are given in Table 4. The Wald test estimates confirm that the null hypothesis of linearity of ECM parameter and consistency parameters are rejected. It describes that the null hypothesis for GTT, GDP, ECT, and UP is rejected, which confirms the asymmetries in these parameters. The short-run dynamics of all variables are also displayed in Table 4. In the short-run, the Wald test rejected the null hypothesis for ECT and UP only. It reports the short-run asymmetric relationship between ECT and UP on TCO2. However, the Wald test accepts the null hypothesis for GTT and GDP on TCO2, demonstrating the linear and symmetric effect of GDP and GTT on TCO2 in the short-run.

Table 3. Results of QARDL.

	ECM		Constant	Long-run estimates			Short-run estimates					
	$\rho(\tau)$	$\mu(\tau)$	$\pi_{GTT}(\tau)$	$\pi_{GDP}(\tau)$	$\pi_{TEC}(\tau)$	$\pi_{UP}(\tau)$	$\chi0_{GTT}(\tau)$	$\chi1_{GTT}(\tau)$	$\chi_{GDP}(\tau)$	$\chi0_{TEC}(\tau)$	$\chi1_{TEC}(\tau)$	$\chi_{UP}(\tau)$
0.05	-0.504***	6.237	-0.400	3.911**	0.151	8.417**	-0.155***	0.018	2.812***	0.724***	0.010	2.362***
	(-5.409)	(1.282)	(-0.815)	(2.531)	(1.094)	(2.470)	(-5.862)	(0.726)	(4.265)	(7.360)	(0.987)	(3.093)
0.10	-0.505***	6.114	-0.973	4.711***	0.227**	7.096***	-0.160***	0.017	2.788***	0.712***	0.022**	2.314***
	(-4.924)	(1.259)	(-1.367)	(3.313)	(2.097)	(3.353)	(-6.036)	(0.667)	(4.303)	(8.689)	(2.536)	(4.586)
0.20	-0.507***	4.133	-0.373	5.253***	0.457**	6.009***	-0.154***	0.014	2.790***	0.715***	0.019**	2.317***
	(-3.818)	(1.471)	(-1.182)	(2.935)	(2.448)	(2.476)	(-7.882)	(0.754)	(3.654)	(7.859)	(2.415)	(4.489)
0.30	-0.509***	3.527	-0.238	6.853***	0.604***	5.051*	-0.147***	0.010	2.802***	0.713***	0.021***	2.343***
	(-5.618)	(0.701)	(-1.528)	(2.868)	(2.879)	(1.871)	(-8.087)	(1.113)	(4.676)	(6.507)	(3.359)	(4.788)
0.40	-0.604***	2.870	-0.195	6.808***	0.710***	5.880***	-0.148***	0.012	2.804***	0.710***	0.024***	2.348***
	(-4.027)	(0.619)	(-1.498)	(3.939)	(15.38)	(2.678)	(-7.682)	(1.419)	(4.440)	(2.156)	(3.371)	(4.149)
0.50	-0.609***	1.819	-0.165	6.157***	0.723***	4.627**	-0.151***	0.014	2.802***	0.708***	0.026***	2.344***
	(-3.156)	(0.229)	(-1.228)	(3.532)	(15.48)	(2.279)	(-11.16)	(1.539)	(4.686)	(5.536)	(3.610)	(4.740)
0.60	-0.612***	1.207	-0.142	5.329***	0.717***	3.567*	-0.142***	0.005	2.800***	0.703***	0.031***	2.345***
	(-5.575)	(0.146)	(-1.132)	(2.892)	(15.18)	(1.765)	(-12.96)	(0.451)	(7.789)	(6.364)	(2.628)	(3.126)
0.70	-0.618***	0.696	-0.152*	5.660***	0.718***	3.227*	-0.138***	0.001	2.803***	0.700***	0.035***	2.352***
	(-4.606)	(0.076)	(-1.730)	(2.754)	(15.43)	(1.714)	(-12.31)	(0.098)	(3.360)	(6.970)	(2.951)	(3.861)
0.80	-0.619***	2.590*	-0.110**	2.726*	0.666***	3.116**	-0.125***	-0.014	2.808***	0.692***	0.043***	2.363***
	(-4.229)	(1.710)	(-2.001)	(1.814)	(10.30)	(2.274)	(-9.671)	(-1.061)	(3.824)	(7.910)	(3.440)	(5.407)
0.90	-0.626***	3.092**	-0.288*	2.209*	0.786***	3.455**	-0.134***	-0.008	2.842***	0.698***	0.041***	2.434***
	(-8.611)	(2.514)	(-1.931)	(1.761)	(10.13)	(2.420)	(-13.05)	(-0.811)	(6.262)	(5.976)	(2.691)	(4.777)
0.95	-0.622***	3.409*	-0.231**	2.148**	0.741***	3.583*	-0.132***	-0.010	2.868***	0.697***	0.045***	2.492***
	(-2.746)	(1.708)	(-2.540)	(2.431)	(5.308)	(1.752)	(-6.542)	(-1.375)	(3.285)	(4.507)	(3.514)	(5.786)

*Notes: ***p<0.01, **p<0.05, *p<0.1.*

Table 4. Results of Wald test.

Variable	Wald-stat	Prob.
P	10.07***	0.000
π_{GTT}	8.056***	0.000
π_{GDP}	7.203***	0.001
π_{TEC}	8.225***	0.001
π_{UP}	7.749***	0.002
$\chi0_{GTT}$	2.180	0.553
$\chi0_{GTT}$	1.027	0.920
χ_{GDP}	2.196	0.335
$\chi0_{TEC}$	10.33***	0.002
$\chi0_{TEC}$	1.444	0.457
χ_{UP}	7.503***	0.002

5. Conclusion and implications

The rapid use of energy and production of carbon emissions in the transport sector has carried great challenges to China's environmental issues. This study investigated the relationship between green transportation taxes and environmental sustainability. There may be hardly any studies showing the relationship between green transportation taxes and environmental sustainability. For the short-run and long-run relationships between green transportation taxes and environmental sustainability, we have applied the QARDL approach. The Wald test is used for its validity. For this purpose, data was taken from 1994Q1 to 2019Q1.

The QARDL findings noted that green transportation taxes have a negative and significant link with environmental sustainability at higher quantiles only in the long run. GDP and urban population have positive and significant relationships with CO2 emissions from the lower to higher quantiles, both in the short and long run. Similarly, energy consumption in transport has a positive and significant relationship with CO2 in the long run at all quantiles except the 5th. However, transport sector energy consumption has a positive and significant association with CO2 emissions only in the short run. Green transportation taxes have a negative and insignificant relationship with CO2 in the short run. The Wald test also shows the GTT parameter constancy across the quantiles.

The government should concentrate on controlling CO2 emissions from transport. There should be a strict policy on transport vehicles that mitigate CO2 emissions. The study postulates that green transportation taxes significantly improve environmental sustainability. Thus, it is suggested that government should increase development expenditures on eco-friendly transportation sources. The imposition of green transportation taxes significantly reduces energy demand for transportation in China. Thus, Chinese government should increase carbon taxes so that energy demand and CO2 emissions should be controlled. Oil and coal consumption produce high CO2 emissions. Thus, high taxes should be imposed on oil and coal consumption vehicles. Natural gas produces less carbon emission. Thus, the use of natural gas should be encouraged in the transportation sector, and low tax rate should be imposed on natural gas.

Future work should examine further the impact of the GTT renewable energy consumption, carbon intensity, and green growth. Upcoming research should conduct a similar analysis for other nations by enriching the model and data span.

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Conflict of interest

All the authors claim that the manuscript is completely original. The authors also declare no conflict of interest.

Appendix

Table A1. Variables definitions.

Variables	Symbol	Definitions	Sources
CO2 emissions from transport	TCO2	CO2 emissions from transport (% of total fuel combustion)	OECD
Green transportation taxes	GTT	Road transport-related tax revenue, % total environmental tax revenue	OECD
GDP per capita	GDP	GDP per capita (constant 2010 US$)	World bank
Energy consumption in transport	TEC	Energy consumption in transport, % total energy consumption	OCED

Urban population	UP	Urban population (% of total population)	World bank

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