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# Sustainable Funding for Roads in South Africa

*(A collection of unknowns)*

Stephan Krygsman

Research supported by SABITA and South African  
Road Federation



# What prompted the research ...

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- The fuel levy is not as productive as it should be. We require an alternative ...
  - How much should we pay...? ✓
  - Who should pay...? ✓
  - How should we pay...? ✓
  - Why should we fund roads ...? ✓
    - What happen if we do not pay....?
  
- Suppose you are the **decision maker** holding the purse ...



# If we answer these questions ... then

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... we will be in a position to ...

1. Understand the importance of roads
  - Support our developmental goals and the economy!
2. Who are the users and non-users that should pay?
3. How much they should pay (per km / per individual)
  - Cent per kilometer!
4. How they should pay?
  - Fuel tax, toll, license, mass-distance etc...

What then is the big problem ...?



# But ...

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- We quickly figured out that...
  - ✓ This area is completely void of *research*
  - ✓ There is virtually no *data* available
  - ✓ The industry is 'saturated' with distrust, suspicion, untruths, etc.
- *Show us any policy document that discuss the funding and financing of the South African road network or transport system*

AND THAT GOES BEYOND SIMPLY MENTIONING THE INFAMOUS  
"USER-PAY" PRINCIPLE

**Skrygsman@sun.ac.za**



# So, back to basics...

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- ❑ Really three issues when you consider road infrastructure:
  1. Understand the South Africa road system and funding situation
    - And what is the status in SA?
  2. What is being done internationally?
  3. What do / should / and how should we collect?
  
- ❑ Way forward



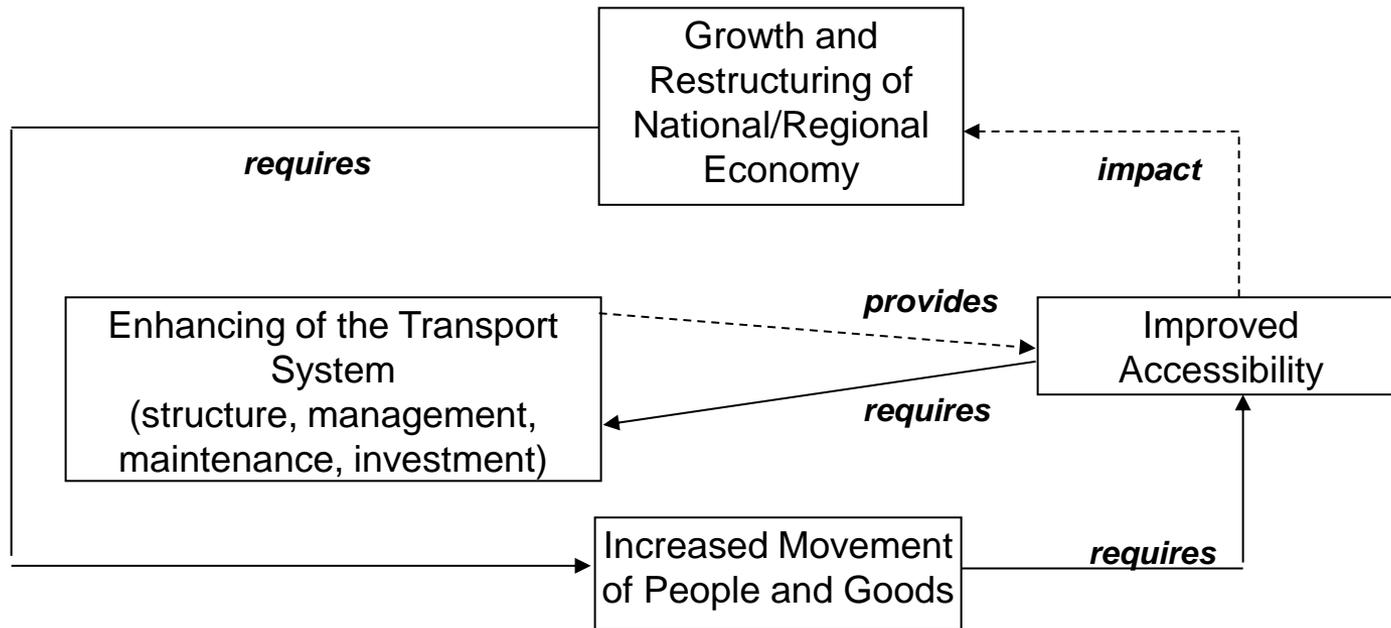
# Introduction...

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Why roads ....



# Really very, very simple ...



## Road maintenance is a highly *productive expenditure* ...

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- ❑ In the absence of regular maintenance, it has been shown that roads deteriorate to a point where the cost of their restoring is *three to five* times that associated with a policy of timely and effective maintenance
- ❑ The cost of poor road management and inadequate road financing are borne primarily by road users through increased vehicle operating costs



# AND Why do we build / maintain roads

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- From the road users' perspective, an increase in the level of resources channelled into road maintenance has strong appeal as they reap private benefits from lower transport costs,
  - a hypothetical 10 percent increase in fuel price (from an increase in fuel levy) would increase operating cost of cars by 1.5 percent and of light commercial vehicles by 2.2 percent.
  - However, as the increment is dedicated to road maintenance, *vehicle operating costs would reduce by 5.4 percent and 9 percent for cars and light commercial vehicles, respectively (3:1 benefit cost ratio).*



# Development does necessarily follow roads ...

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- ❑ For every R1000 investment in roads, the economy expand (maybe) with R15 ...
  
- ❑ Rural:
  - a 20% *reduction* in transport cost, fully passed on to farmers, will *raise the agricultural output by 6%*,
  
- ❑ But
  - A one percent *increase* in the distance farmers transport their crops to the market for selling will increase the crop yield by 0.161%.
    - 20% = 3% *increase*



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Roads are important as a economic infrastructure

...

Funding and financing of roads has received a lot  
of attention ... yes ...?



# Roads to riches

Better transport investment

Marion Terrill



## GOVERNMENT POLICY STATEMENT ON LAND TRANSPORT FUNDING 2012/13–2021/22 JULY 2011

[newzealand.govt.nz](http://newzealand.govt.nz)

Report of the National Surface Transportation Infrastructure Financing Commission

# PAYING OUR WAY

A New Framework  
for Transportation Finance



EXECUTIVE SUMMARY



COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 22.07.1998  
COM(1998) 466 final

### Fair Payment for Infrastructure Use:

A phased approach to a common transport infrastructure charging framework in the EU

White Paper

(presented by the Commission)

## NATIONAL SURFACE TRANSPORTATION INFRASTRUCTURE FINANCING COMMISSION



AUTHORIZING  
LEGISLATION

COMMISSIONERS

MEETINGS &  
HEARINGS

BACKGROUND  
DOCUMENTS

### Final Report

On Thursday, February 26, 2009, the National Surface Transportation Infrastructure Financing Commission released its Final Report. A copy of the full report can be downloaded by [clicking here](#). The Press Release can be downloaded by [clicking here](#), and the Executive Summary, which summarizes the report's conclusions and recommendations, can be downloaded by [clicking here](#). Printed bound copies of the Final Report can be ordered by e-mailing [financecommissionreport@dot.gov](mailto:financecommissionreport@dot.gov). A copy of the Commission's Options Evaluation Tool, which they used to evaluate the different funding and financing options, is available at the [link below](#).

The Financing Commission offers a roadmap for sweeping reform of the nation's transportation infrastructure funding and finance framework. The Commission offers specific recommendations for increasing investment in transportation infrastructure while at the same time moving the Federal Government away from reliance on motor fuel taxes toward more direct fees charged to transportation infrastructure users.

The Financing Commission's recommendations are timely and provocative, as the nation grapples with staggering shortfalls in infrastructure funding and the new administration turns its attention to building what President Obama calls "the roads and bridges...necessary to make this country great again."

ADB

# Financing Road Construction and Maintenance after the Fuel Tax Reform

Asian Development Bank



UNIVERSITEIT·STELLENBOSCH·UNIVERSITY  
jou kennisvenoot-your knowledge partner

# And in Africa ...

- ❑ Focus much more on establishing Road Funds
  - Low 'user' base ...
  - Most has established so-called '*second generation*' road funds
  - Arrangements to diversify road user charges, with the possibility of introducing direct charges for road use

## III. INSTITUTIONAL AND MANAGEMENT STRUCTURE

### d Fund Board

Parliament of the United Republic of Tanzania enacted the Roads Toll Act (Amendment 2) in December 1998, establishing the RF and the RFB, with the following provisions:

- a) all monies collected as road tolls imposed on diesel and petrol, transit fees, heavy vehicle licences, vehicle overloading fees or from other sources at the rates to be determined by the Parliament from time to time shall be paid into the Fund;
- b) all monies collected as roads tolls shall be deposited in the account of the Fund;
- c) at least 90 percent of the money deposited in the Fund shall be used for maintenance and emergency repair of classified roads and related administrative costs in Mainland Tanzania in accordance with approved operational plans made by TanRoads and local authorities; and
- d) a maximum of 10 percent of the money deposited in the Fund may be used for road development and related administration costs in accordance with plans and budgets approved by the Parliament.

### rd Composition

RFB is to consist of nine members:

- one chairperson, appointed by the President;
- three Permanent Secretaries of the ministries responsible for roads, finance and local government;
- one senior civil servant not below the rank of director from any ministry; and
- four road user representatives from the private sector (current members represent: Tanzania Truck Owner Association, Tour Operator Association, Tanzania Federation of Cooperatives and Tanzania Roads Association)

RFB also is to serve as a Ministerial Advisory Board for the National Roads Agency Roads). The Board is to put in place a Secretariat to manage the day-to-day activities. The Secretariat is composed of a RF manager, two planning and monitoring engineers, one accountant and five support staff. The manager is appointed through a competitive process for a period of five years at a time.





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Probably best example of good approach...





# Presentation on the RFA to the WBCG's 8th Annual Logistics and Transport Workshop – Swakopmund 28 September 2016



## Mass Distance Charges Travelling Distance Charges for Foreign-registered Vehicles



In effect from 1 June 2016

Charge Level	Vehicle Type	Vehicle Description	Not equipped to draw	Equipped to draw	MDC NS per 100 km
1	Bus	Minibus, designed for 17 to 35 persons, including the driver	V value: More than 3,500 kg & less than or equal to 7,000 kg	D value: More than 3,500 kg & less or equal to 7,000 kg	5.90
1	Goods vehicle	Single-unit Truck	V value: More than 3,500 kg & less than or equal to 7,000 kg	D value: More than 3,500 kg & less or equal to 7,000 kg	5.90
2	Bus	Minibus, designed for 17 to 35 persons, including the driver	V value: More than 7,000 kg & less than or equal to 16,000 kg	D value: More than 7,000 kg & less or equal to 16,000 kg	7.10
2	Goods vehicle	Truck	V value: More than 7,000 kg & less than or equal to 16,000 kg	D value: More than 7,000 kg & less or equal to 16,000 kg	7.10
3	Bus	Bus, or bus-train designed for 35, persons including the driver	V value: More than 16,000 kg	D value: More than 16,000 kg	12.90
3	Goods vehicle	Truck	V value: More than 16,000 kg & less than or equal to 34,000 kg	V value: More than 16,000 kg & less than or equal to 34,000 kg	12.90
3	Goods vehicle	Truck-tractor	n.a.	D value: More than 16,000 kg & less than or equal to 34,000 kg	12.90
4	Goods vehicle	Truck-tractor	n.a.	D value: More than 34,000 kg & less than or equal to 44,000 kg	25.90
4	Goods vehicle	Truck-tractor	n.a.	D value: More than 34,000 kg & less than or equal to 44,000 kg	25.90
5	Goods vehicle	Truck-tractor	n.a.	D value: More than 44,000 kg	38.80

## MANDATE

- Manage the RUCS
- Manage the Road Fund
- Secure and allocate sufficient funding for payment of expenditure – section 17(1)
- Monitor utilisation of funds
- Manage the Road Fund and Road User Charging System
- Therefore RFA's basic role – road fund regulator
  - meet economically justified funding requirements of RA and AAs
  - acts as trustee on behalf of the road users to ensure value

## CONCLUSION

- Value-for-money strategy: consumer / road user
  - Technical audits
  - Robust project management techniques & tools
  - Road user feedback / forums
- Sustainable funding:
  - Sourcing of alternative funding
  - Vigorous marketing strategies
  - Socio-political involvement
- Interest of RFA – larger extend road subsector
  - Policy reform
  - Legal instrument review
- Integrated planning for road / transport infrastructure
  - MWT / RA / NPC / MVA / NRSC
  - Road users / forum

# And now in South Africa

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- ❑ 1981 – Peter Freeman
- ❑ ....
- ❑ ....
- ❑ ....
- ❑ 1996 White Paper on Transport Policy
- ❑ ....
- ❑ ....
- ❑ ....
- ❑ ....
- ❑ NATMAP ...

## Nothing on Funding / Financing

Other than the statement that we are going to use the user pay principle



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This raises two questions:

1. What is the status of our roads from an economic / financial perspective?
2. How do we compare internationally?

Some interesting facts...!

*Remember*

- *we are now the holder of the purse*
- *transport serves the economy...*



# Global Competitiveness Index

- Where does South Africa fit in ...?
  - Overall: 47 - 55 (out of 144)
  - Roads: 29 - 37
  - *Best of all our transport infrastructure*

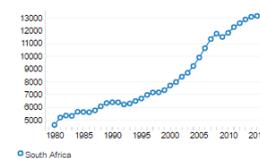
## South Africa

### Key Indicators:

Population (millions)	55.0
GDP (US\$ billions)	313.0
GDP per capita (US\$)	5694.57
GDP (PPP) per capita (US\$)	13165.16
GDP (PPP) as share (%) of world total	0.64

GDP (PPP) per capita, current international dollars  
current international dollars, 1980-2015

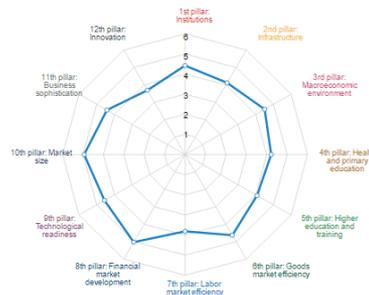
**\$13,165.16 2015**



Gross domestic product based on purchasing-power-parity (PPP) per capita GDP

### Performance Overview

South Africa climbs seven places to reach 49th, reversing its four-year downward trend thanks largely to increased uptake of ICTs—especially higher Internet bandwidth—and improvements in innovation (up five places to 38th), which establish the economy as the region's most innovative. South Africa also hosts the continent's most efficient financial market (12th) and benefits from a sound goods market (38th), which is driven by strong domestic competition (28th) and an efficient transport infrastructure (20th). It further benefits from strong institutions (38th), particularly property rights (24th) and a robust and independent legal framework. Reducing corruption (70th) and the burden of government regulation (117th) and improving the security situation (102nd) would further improve institutions. The country also needs to address its inefficient electricity supply (116th) and inflexible labor market (107th). Even more worrisome are health (128th) and the quality of education (120th), where higher secondary enrollment rates will not be enough to create the skills needed for a competitive economy.



## Competitiveness Rankings

Access the rankings for every component of the Global Competitiveness Index (GCI) by choosing an item from the pull-down menu which reproduces the structure of the GCI. Click "Economy" to sort table alphabetically to quickly identify an economy of interest.

Download the full GCI Database in Excel  
About the GCI methodology

Show this page:



Head line:



Rank	Economy	Info	Value	Distance from best
Select Index Component: 2.02 Quality of roads				
In your country, how do you assess the quality of the roads? [1 = extremely underdeveloped – among the worst in the world; 7 = extensive and efficient – among the best in the world]				
1	United Arab Emirates		6.6	
2	Portugal		6.3	
3	Austria		6.3	
4	France		6.2	
5	Netherlands		6.1	
6	Singapore		6.1	
7	Hong Kong SAR		6.0	
8	Oman		6.0	
9	Switzerland		6.0	
10	Japan		5.9	
11	Spain		5.9	
12	Taiwan, China		5.9	
13	Germany		5.9	
14	Finland		5.9	
15	Luxembourg		5.7	
16	United States		5.7	
17	Croatia		5.6	
18	Korea, Rep.		5.6	
19	Malaysia		5.6	
20	Sweden		5.5	
21	Denmark		5.4	
22	Slovenia		5.4	
23	Canada		5.3	
24	Cyprus		5.3	
25	Ireland		5.3	
26	Saudi Arabia		5.3	
27	Belgium		5.3	
28	Norway		5.2	
29	Puerto Rico		5.2	
30	United Kingdom		5.2	
31	Chile		5.1	
32	Sri Lanka		5.1	
33	Barbados		5.1	
34	Qatar		5.0	
35	New Zealand		4.9	
36	Lithuania		4.9	
37	South Africa		4.9	
38	Slovenia		4.9	

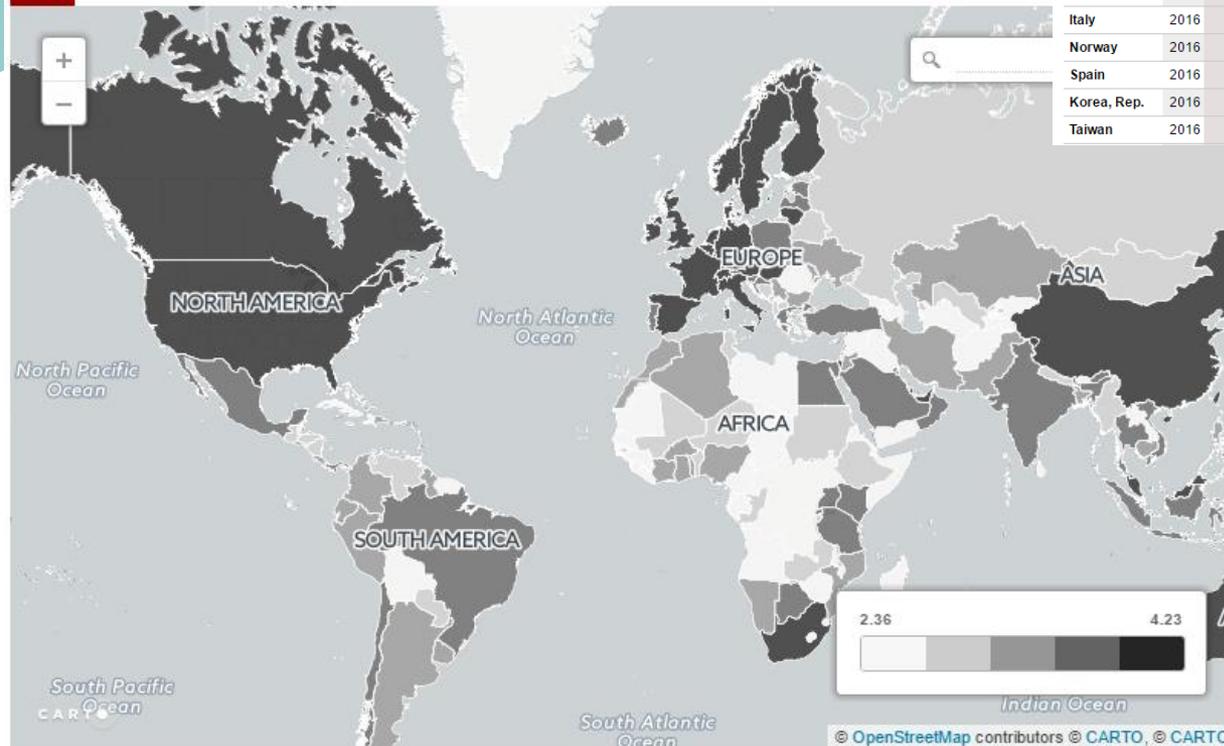
# Logistics Performance Index

○ 20<sup>th</sup>!

Country	Year	LPI Rank	LPI Score	Customs	Infrastructure	International shipments	Logistics competence	Tracking & tracing	Timeliness
Germany	2016	1	4.23	4.12	4.44	3.86	4.28	4.27	4.45
Luxembourg	2016	2	4.22	3.90	4.24	4.24	4.01	4.12	4.80
Sweden	2016	3	4.20	3.92	4.27	4.00	4.25	4.38	4.45
Netherlands	2016	4	4.19	4.12	4.29	3.94	4.22	4.17	4.41
Singapore	2016	5	4.14	4.18	4.20	3.96	4.09	4.05	4.40
Belgium	2016	6	4.11	3.83	4.05	4.05	4.07	4.22	4.43
Austria	2016	7	4.10	3.79	4.08	3.85	4.18	4.36	4.37
United Kingdom	2016	8	4.07	3.98	4.21	3.77	4.05	4.13	4.33
Hong Kong, China	2016	9	4.07	3.94	4.10	4.05	4.00	4.03	4.29
United States	2016	10	3.99	3.75	4.15	3.65	4.01	4.20	4.25
Switzerland	2016	11	3.99	3.88	4.19	3.69	3.95	4.04	4.24
Japan	2016	12	3.97	3.85	4.10	3.69	3.99	4.03	4.21
United Arab Emirates	2016	13	3.94	3.84	4.07	3.89	3.82	3.91	4.13
Canada	2016	14	3.93	3.95	4.14	3.56	3.90	4.10	4.01
Finland	2016	15	3.92	4.01	4.01	3.51	3.88	4.04	4.14
France	2016	16	3.90	3.71	4.01	3.64	3.82	4.02	4.25
Denmark	2016	17	3.82	3.82	3.75	3.66	4.01	3.74	3.92
Ireland	2016	18	3.79	3.47	3.77	3.83	3.79	3.98	3.94
Australia	2016	19	3.79	3.54	3.82	3.63	3.87	3.87	4.04
South Africa	2016	20	3.78	3.60	3.78	3.62	3.75	3.92	4.02
Italy	2016	21	3.76	3.45	3.79	3.65	3.77	3.86	4.03
Norway	2016	22	3.73	3.57	3.95	3.62	3.70	3.82	3.77
Spain	2016	23	3.73	3.48	3.72	3.63	3.73	3.82	4.00
Korea, Rep.	2016	24	3.72	3.45	3.79	3.58	3.69	3.78	4.03
Taiwan	2016	25	3.70	3.23	3.57	3.57	3.95	3.59	4.25

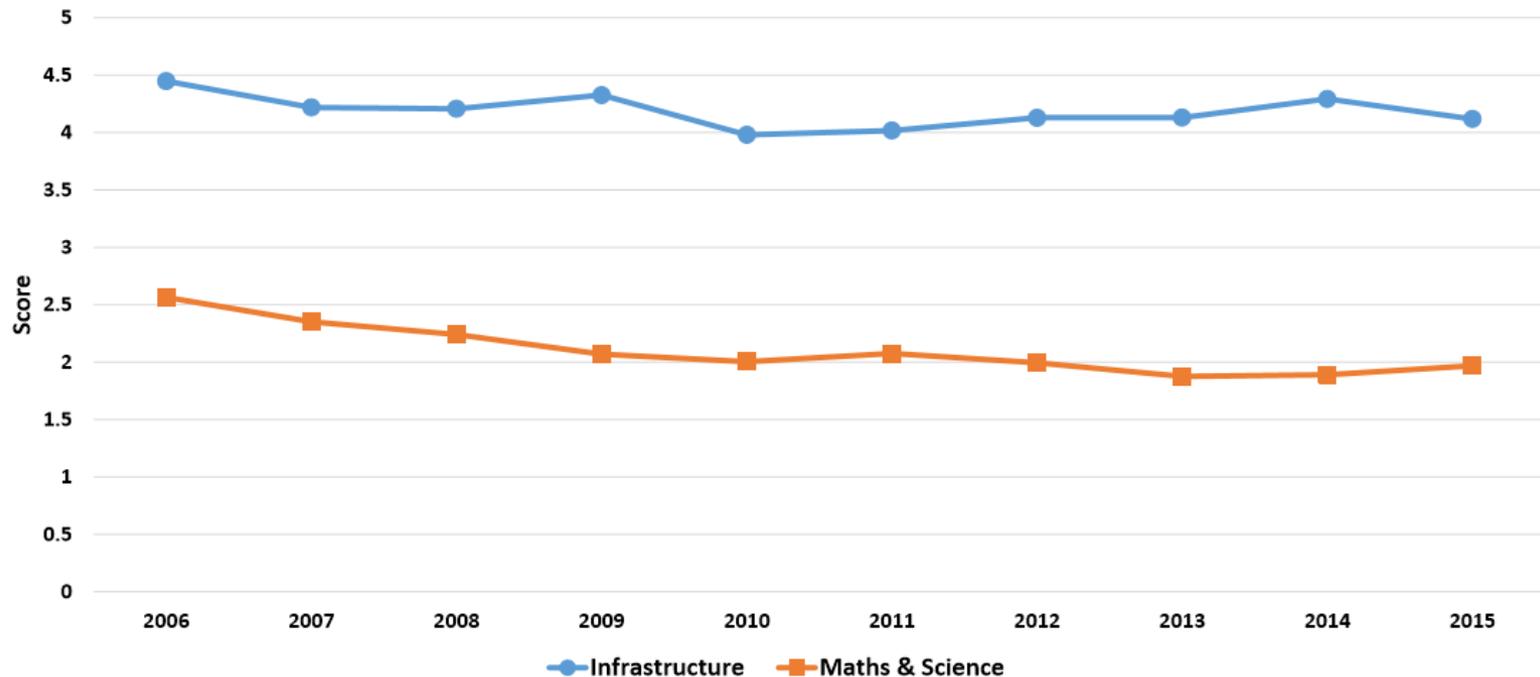
## Global Rankings 2016

2016 2014 2012 2010 2007



# So infrastructure is a problem ...

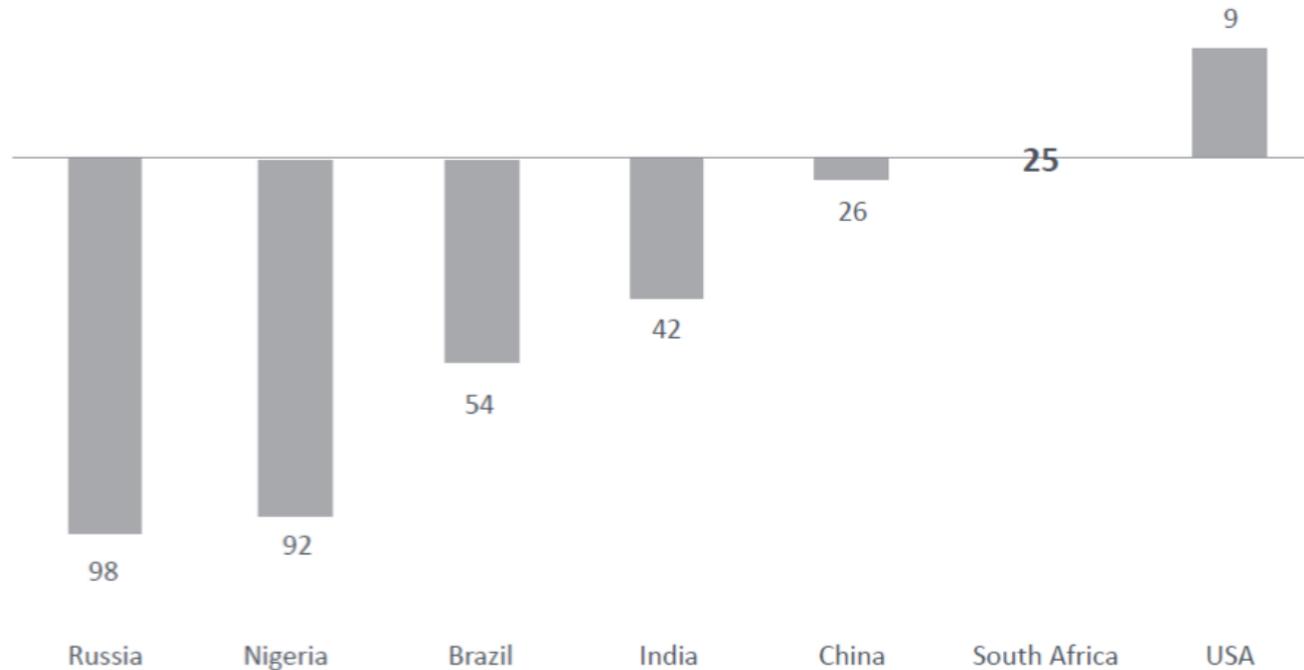
So is infrastructure a problem? Consider hard and soft: Score



## What about other rankings? We're also placed well amongst BRICS for LPI



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STELLENBOSCH  
UNIVERSITY



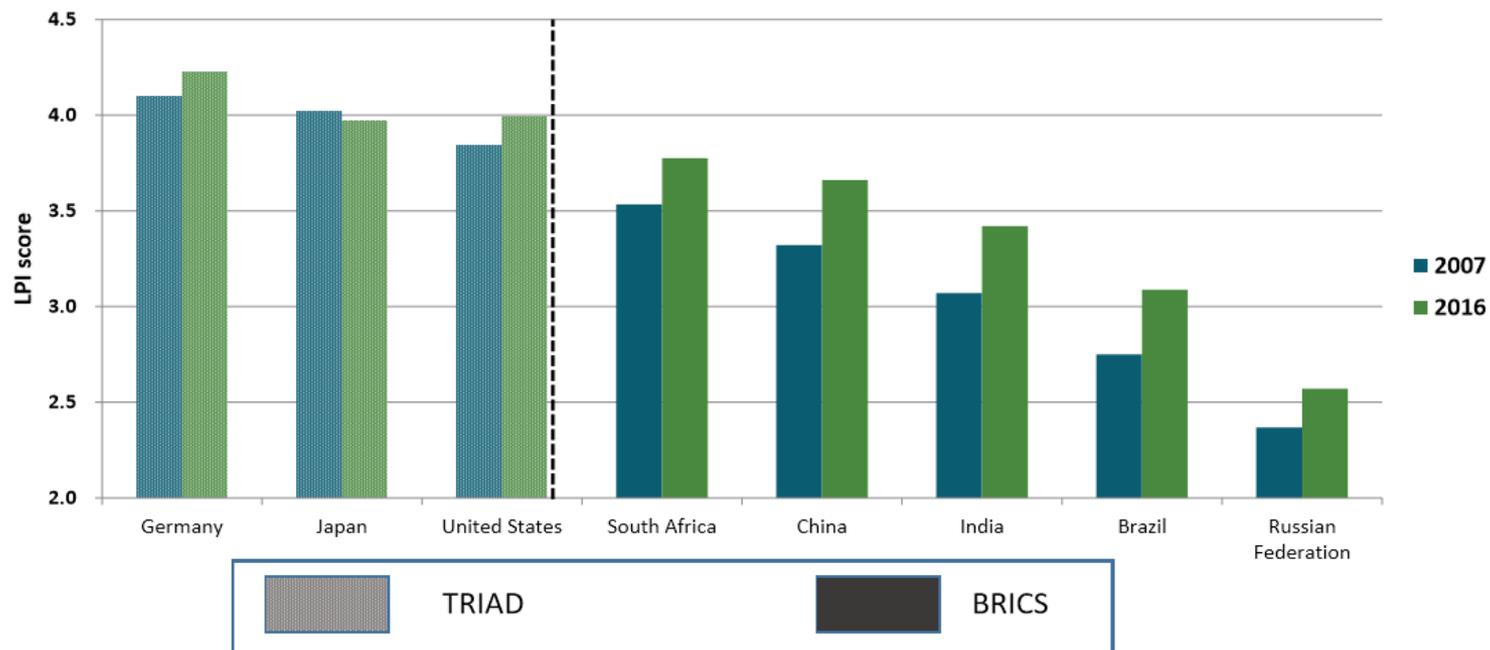
\*Average over four editions: 2010, 2012, 2014, 2016

LOGISTICS  
BAROMETER 2016 South Africa



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jou kennisvennoot-your knowledge partner

## But with a faster “catch-up” from most nations



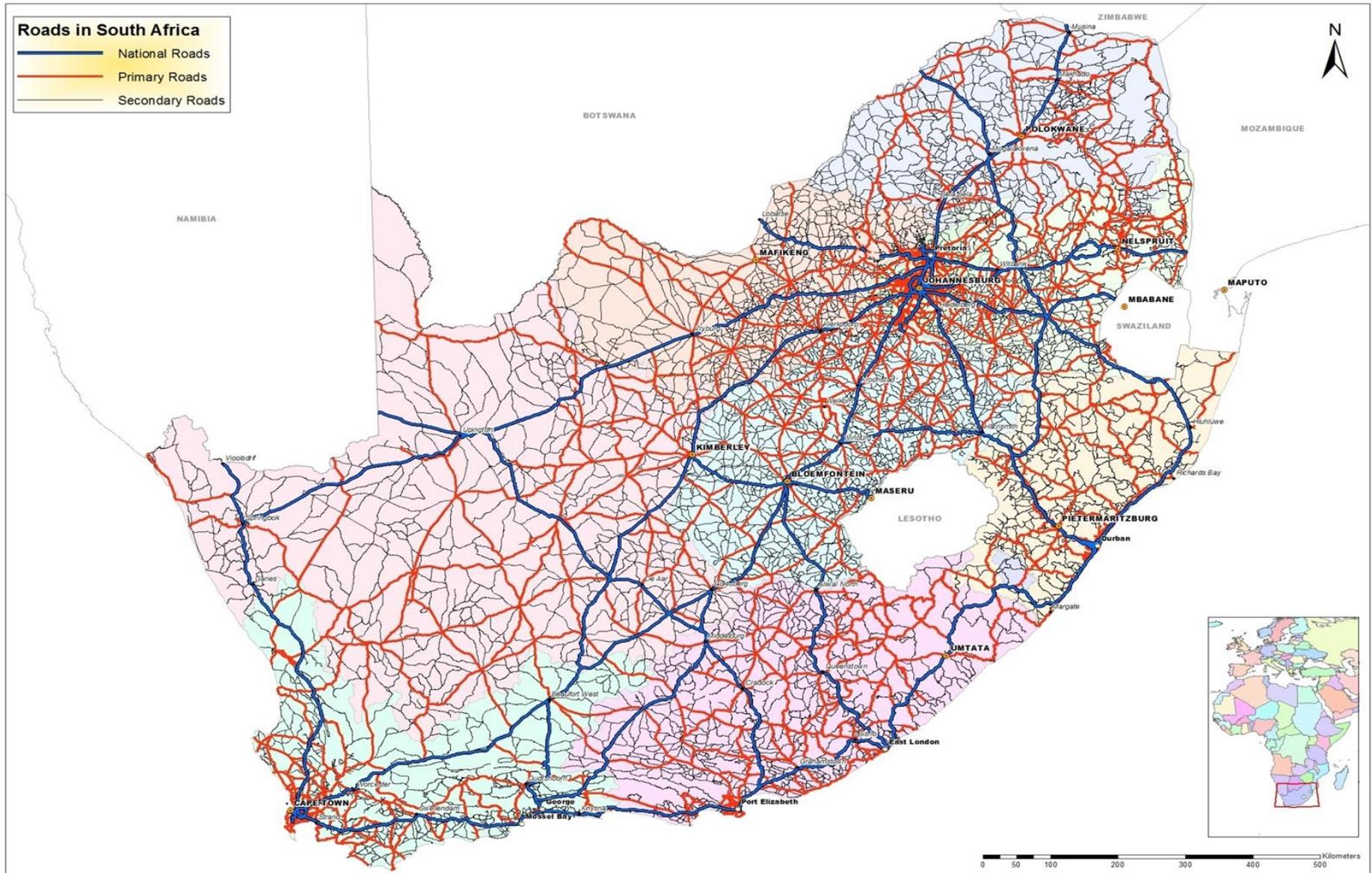
# Improving our indices ...

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- ❑ We *will not improve* our ranking *dramatically* by continuing to invest in roads,
  - benefits will be marginal, and demand large capital outlay
  - *BUT, we can very quickly loose our ranking if we do not maintain our infrastructure – first signs are there*
  
- ❑ Biggest benefit will be from investment in other sectors ...

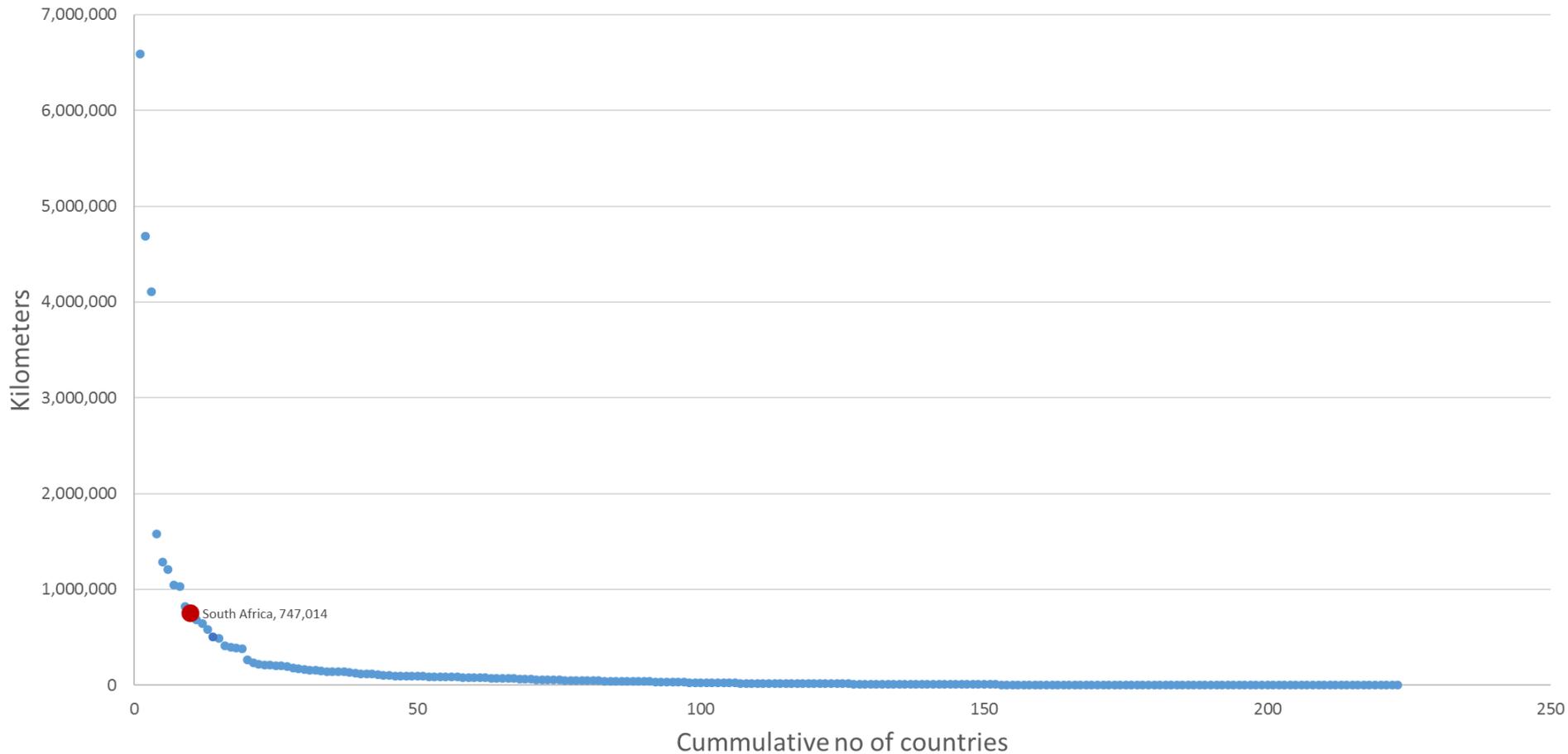


# And our road network ...

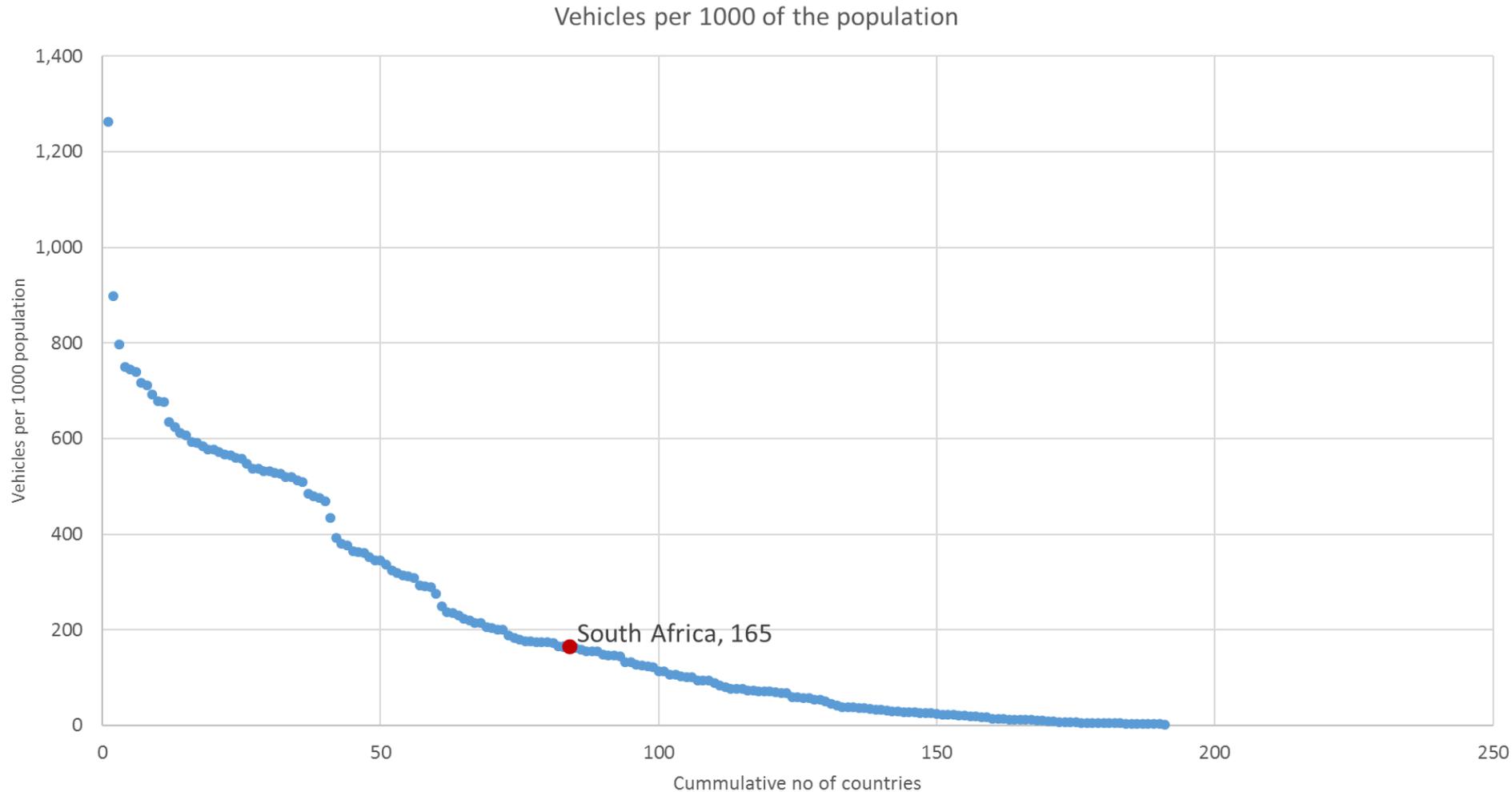


# Size of our network ... (10<sup>th</sup> – 13<sup>th</sup>)

Total kilometers of paved and unpaved road network



# Size of our vehicle fleet ... (85<sup>th</sup>)



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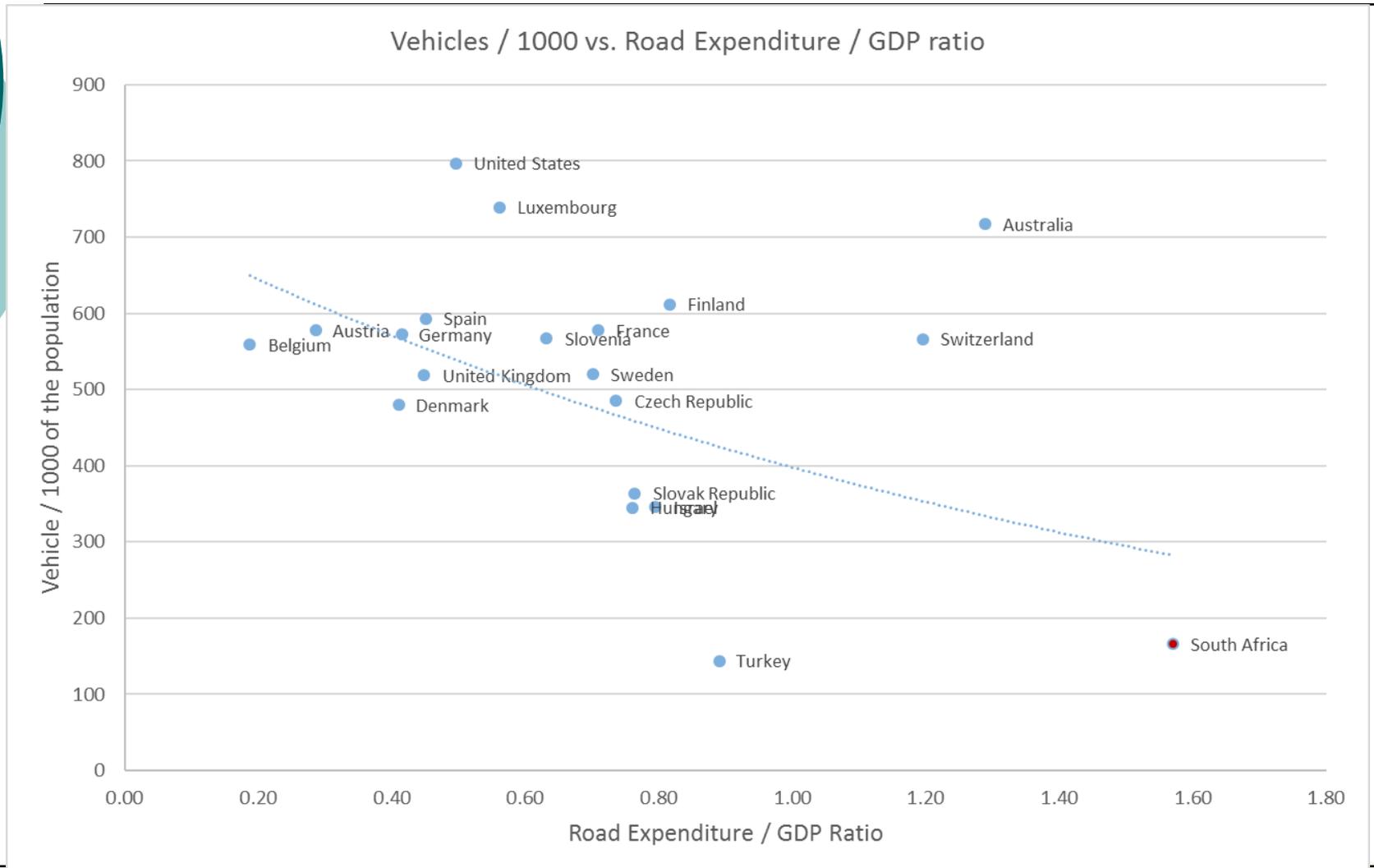
PS:

If your network is bigger, your fleet, *the users*,  
should also be the bigger

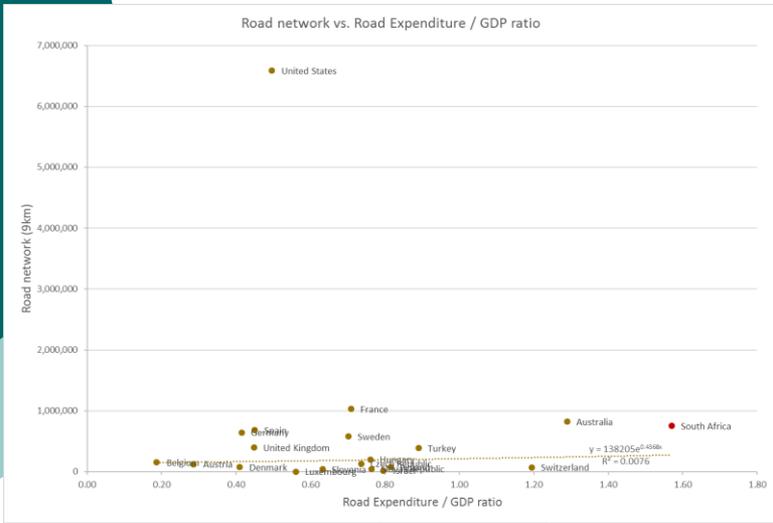
If not, you will either be paying proportionally  
more (if they are less) for the network or proportionally  
less (if they are more)



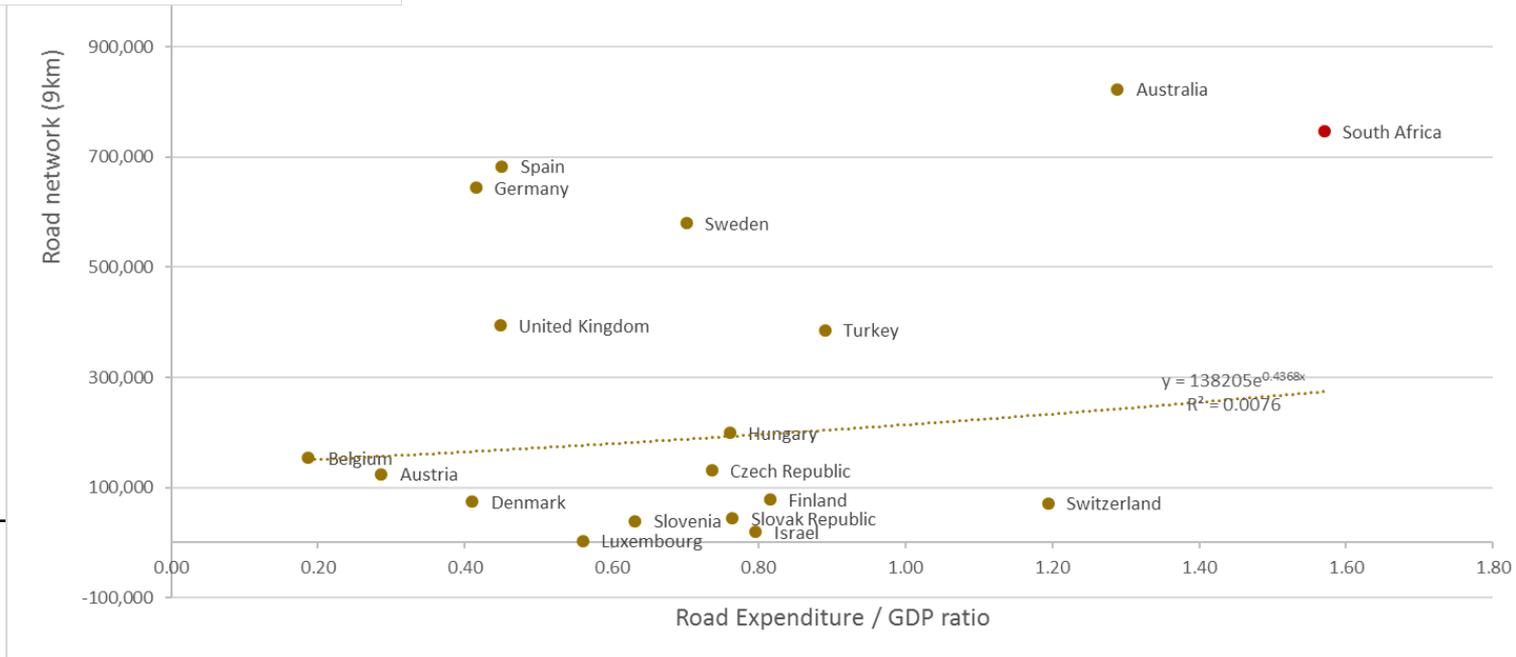
# How is our performance ... (1)



# How is our performance ... (2)



Road network vs. Road Expenditure / GDP ratio



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What is our Government planning  
to do...?



NATIONAL DEVELOPMENT PLAN 2030

# Our future - make it work

## EXECUTIVE SUMMARY

# OUR FUTURE

ETC.

 national planning  
commission  
Department:  
The Presidency  
REPUBLIC OF SOUTH AFRICA



**NATMAP 2050**  
NATIONAL TRANSPORT MASTER PLAN  
SYNOPSIS UPDATE

 **transport**  
Department:  
The Presidency  
REPUBLIC OF SOUTH AFRICA

NATMAP 2050 COLLOQUIUM  
OCTOBER 2015

### Publications in the Series

1. The New Growth Path: Framework
2. Accord 1: National Skills Accord
3. Accord 2: Basic Education and Partnerships with Schools
4. Accord 3: Local Procurement Accord
5. Accord 4: Green Economy Accord

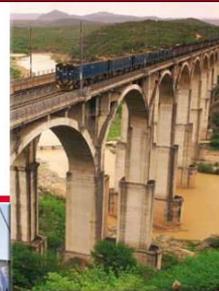


## THE NEW GROWTH PATH: FRAMEWORK

 **economic  
development**  
Economic Development Department  
REPUBLIC OF SOUTH AFRICA

Private Bag X9047, CAPE TOWN, 8000  
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77 cnr Meiripos and Esselen Streets,  
D11 Campus, 3rd Floor, Block A,  
Sunnyside, PRETORIA  
Tel: (012) 394 1006 • Fax: (012) 394 0255



**economic  
development**  
Economic Development Department  
REPUBLIC OF SOUTH AFRICA

# South Africa's Transport Policy Context

Policy / Trends	Implication for Roads	Capital Funding
Infrastructure led growth	<b>Good</b> Invest in transport infrastructure (Corridors, ports, rail, airports – your transfer facilities)	General Revenue Fund / <b>User charges</b>
Focus on manufacturing	<b>Average</b> Invest in transport / logistics (IDZ, ports, hubs etc.)	General Revenue Fund
Move away from resources-based economy	<b>Average</b> Invest in transport	General Revenue Fund
Focus on exports	<b>Average</b> Invest in logistics / transport links	General Revenue Fund
Focus on cities	<b>Average</b> Focus on public transport	General Revenue Fund
Economic Infrastructure	<b>Average</b> Roads, ports, pipeline, airports, etc.	General Revenue Fund / User charges
Focus on Public Transport	<b>No impact</b> (Subsidies, vehicles, some dedicated lanes),	General Revenue Fund / Users charges
Increased road maintenance	<b>Good</b> Focus on rural roads, urban streets in formally segregated neighborhoods / towns	General Revenue fund and weight distance
Ext.	Average	



# Some risks, threats & opportunities



## Aligning Public Transport Subsidies to Policy



### EXECUTIVE SUMMARY

The current public transport subsidy framework is not aligned with the national transport policy that promotes an efficient and effective public transport system. South Africa's transport system is fragmented, subsidies are paid to rail and bus modes that have a limited coverage compared to minibus taxis, and public transport subsidies continue to rise without any proportionate benefits to the public. An integrated public transport network would make it easier to align the transport subsidy (where appropriate) to network objectives. Research by the Financial and Fiscal Commission (the Commission) found that a desirable subsidy framework should address social equity, encourage public transport operational productivity and incentivise a modal shift from private to public transport. A revised subsidy framework, which incorporates these three aspects, would cost government more than 2.6 times the current subsidy bill, but would be inclusive (unlike the current subsidy, which supports only a tiny proportion of the population). The Commission recommends that the Department of Transport (DoT) uses the research findings to formulate and implement a transport subsidy framework that explicitly incorporates these three aspects.

## Joburg Mayor Mashaba's shock move

POLITICS / 14 September 2016, 07:38am

ANNA COX

Johannesburg - In a shock move during his acceptance speech on Tuesday, new mayor Herman Mashaba put the brakes on bicycle lanes and said there would be no co-operation with Sanral over e-tolls by the Joburg metro police.

Mashaba announced that the R70 million budgeted on bicycle lanes would not go ahead.



Joburg mayor Herman Mashaba reassured all residents that under the DA-led council, the city would have a government for everyone. Picture: Matthews Baloyi. Credit: INDEPENDENT MEDIA

It was former mayor Parks Tau's dream to establish bicycle lanes around the city to reduce the number of vehicles on the roads and to get people fit.

"When every road in Joburg is tarred, then maybe the city will again look at bicycle lanes," said Mashaba.



He also raised the ante on the contentious Gauteng e-tolls saga, saying there would be no co-operation between the JMPD and Sanral and that there "would be no harassment of motorists about outstanding e-toll payments".

# Some risks, threats & opportunities



transport

Department:  
Transport  
REPUBLIC OF SOUTH AFRICA  
Forum Building, 159 Struben Street, Pretoria, 0001

## DISCUSSION PAPER

### TOWARDS THE DEVELOPMENT OF THE MULTI-MODAL TRANSPORT PLANNING AND CO-ORDINATION DRAFT BILL



VERSION: 02

DATE: 25 SEPTEMBER 2015

- The fragmentation of transport functions is related to the dispersal of funding as well. There are serious questions about the optimal use of the available funding in the entire transport sector. The current subsidy system is deemed to entrench the old travel patterns instead of bringing about transformation. In the context of limited resources it is important to utilize the resources in the manner that gives the country the best transport solutions. Without integrated transport planning, project identification and implementation, it is not easy to use the resources efficiently;

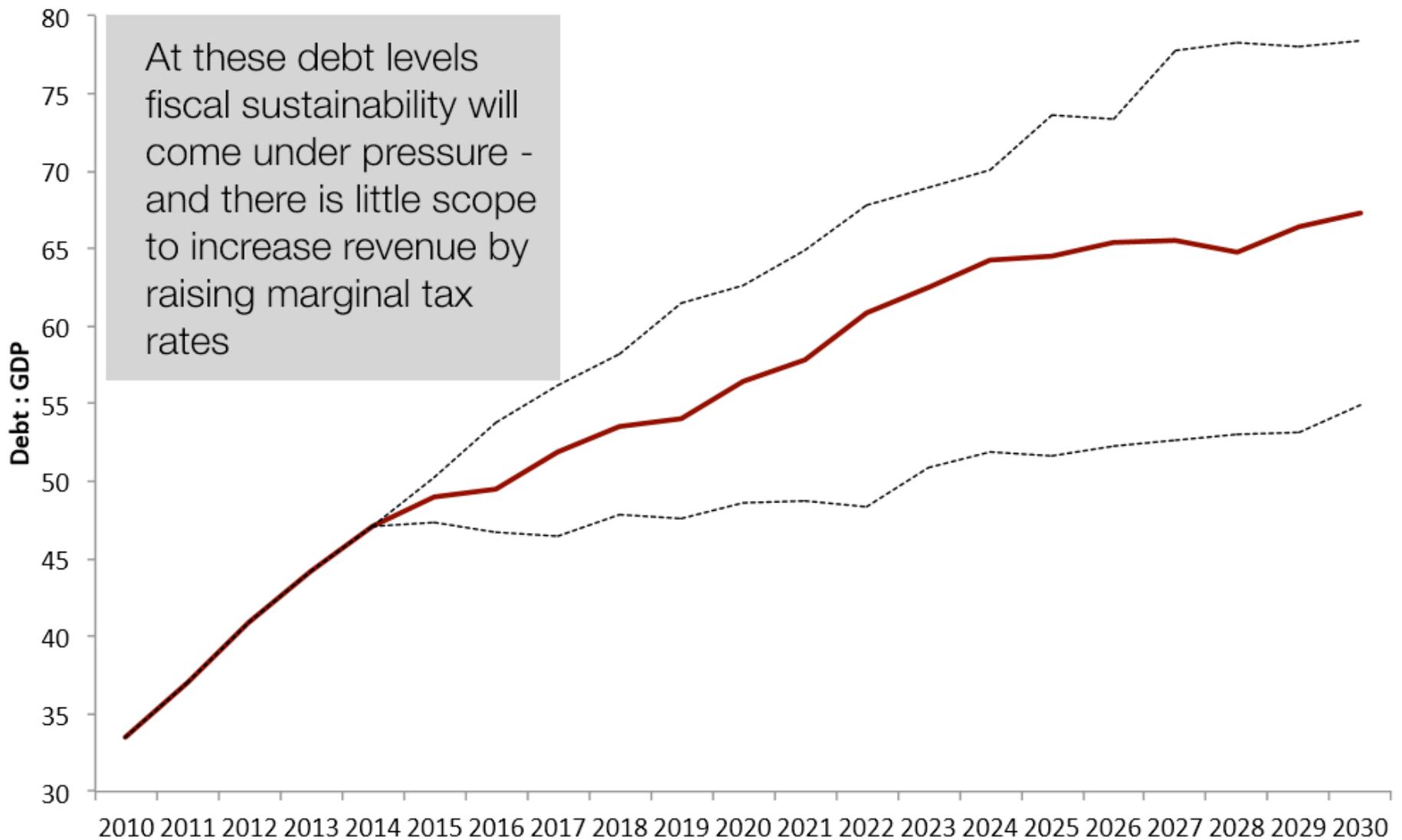
#### Public Finance Management, Act No. 1 of 1999 as amended

This Act is obviously relevant to transport planning in that the implementation of transport plans and related projects is financed from the government coffers. The use of the funds by the national and provincial government is therefore subject to the provisions of the Act. Therefore the provincial and national government cannot use funds as they please to meet transport needs if funds are allocated for other purposes and ring-fenced funds for transport cannot be used for other purposes as well. This is important in the context of limited resources to achieve a myriad of government goals and objectives.

The limitation of funding for transport planning, infrastructure development, maintenance, rehabilitation, services and operations is a serious matter for South Africa. There are currently various initiatives being explored for funding, including establishment of Funds exclusively for transport. How the Funds should operate will be subject to the provisions of the Act. It is therefore important that the Funds should not contravene the Act. This applies



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### 3. Government's fiscal position is precarious

# Outcome of the trends ....

---

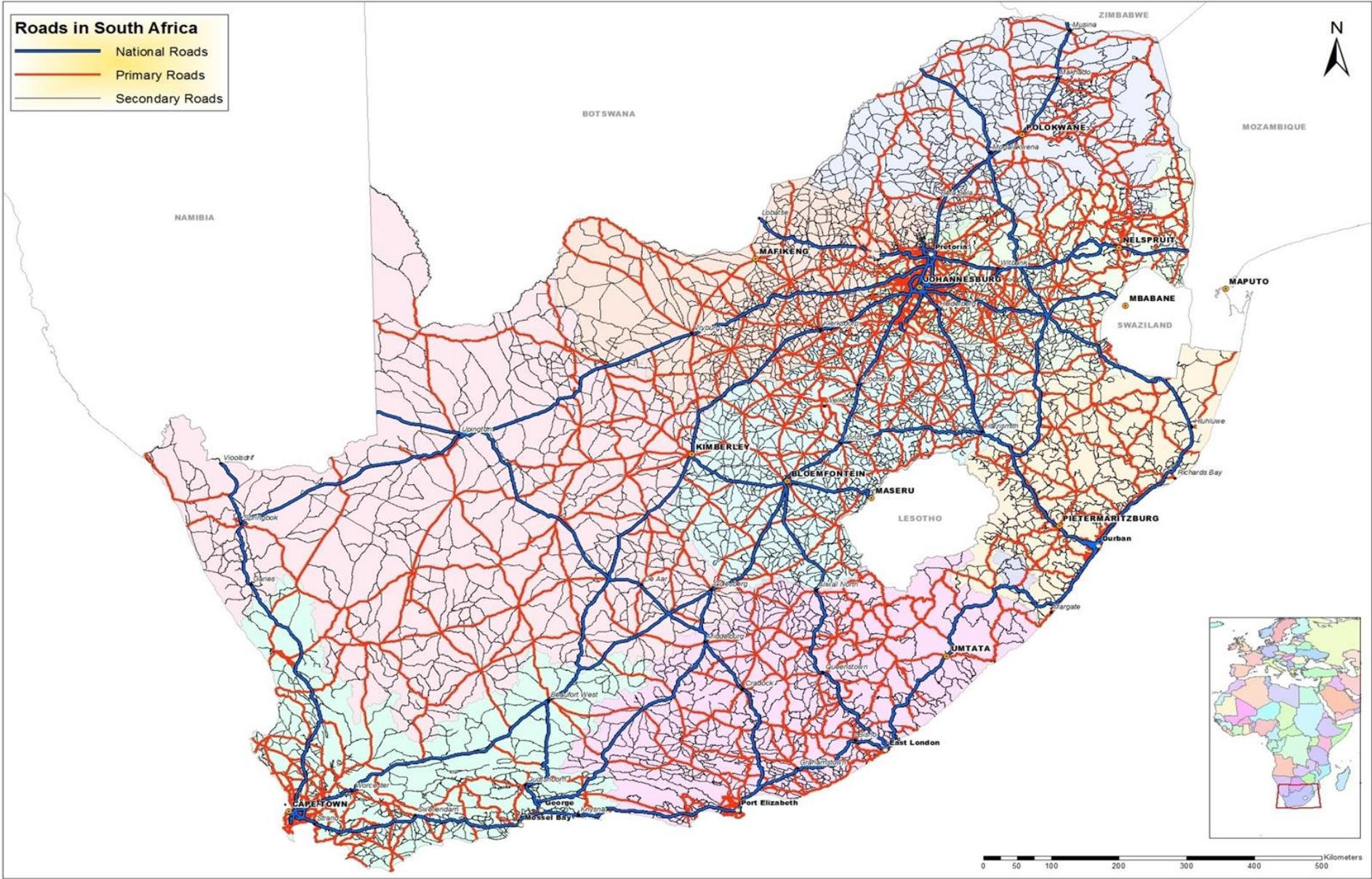
1. So everything is pointing to large investment in transport infrastructure
  - Not necessarily roads
  - A lot of rather large and ambitious schemes
2. Main source remains our *General Revenue Fund*

Is there space to maneuver in our current road regime ...?



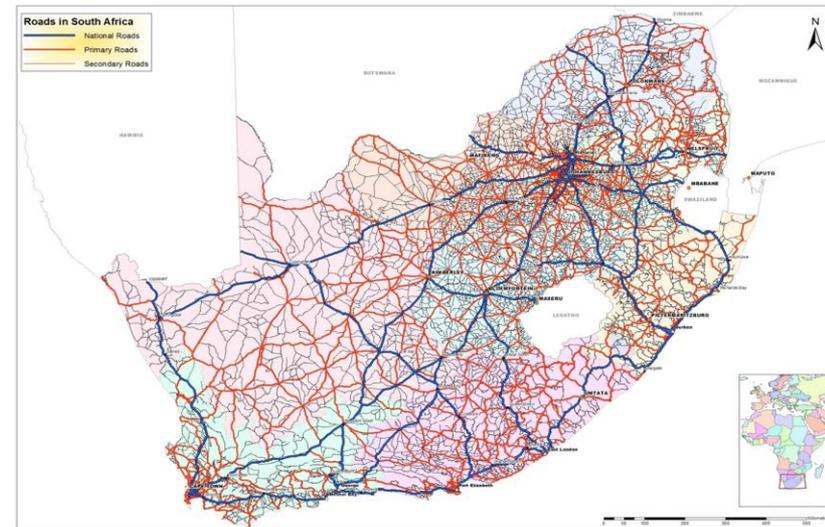
**Roads in South Africa**

- National Roads
- Primary Roads
- Secondary Roads



# What is it worth?

- Total road capital stock in the country (2010):
  - +/- 750 000 km
- Value of Road network:
  - R1 047 trillion (in 2010)
    - R1 047 000 000 000 ...
- This is *current value*
  - No backlog, no expansion
- *Question is how much and how do we pay for this?*
  - Not one credible study / project / idea in South Africa
    - User *pay principle* is mooted



# Two approaches ...

---

## □ Some Theory:

- It is an acknowledged economic principle that consumers and users must carry the full and real cost of their consumption or utilisation to ensure that scarce resources are allocated fairly to users
- Marginal Social Cost (MSC) ... or **Average Cost**
  - Many questions...

## □ Two Methods to determine costs:

1. *The fixed costs method (historic costs method)*
2. Development cost method (current cost method)

## □ Assuming lifespan of road is 25 years, discount rate of 6, 8 or 10% (2010):

- **6%** = **R 81,903,373,968 (and 25 cents)!!!**
- **8%** = R 98,081,681,667
- **10%** = R 115 345 971 582

- *Without the backlog, expanding the network, without taking into consideration other factors such as environmental costs, accidents, etc.*



# Per kilometer income required (2010)

---

- Assumptions (2010):
  - 137,784,090,042 veh. km's
  - R1 047 000 000 000 ...
  - 750 000 km
  
- Let us not differentiate between *vehicle type*, and exclude environmental, accident costs, etc.
  - +/- 20% higher
  
  - (6%) R 81,903,373,968 = 59 c/km
  - (8%) R 98,081,681,667 = 71 c/km
  - (10%) R115 345 971 582 = 84 c/km



---

How much did we collect?



# Road Infrastructure Generated Revenue

Road Infrastructure and Road Use Generated Revenue (R)						
#	Road user revenue paid via:	31-Mar-11	31-Mar-12	31-Mar-13	31-Mar-14	31-Mar-15
1	Fuel levy	34,417,577	36,602,263	40,410,389	43,300,000	47,516,564
2	Road Accident Fund	14,474,058	16,989,071	17,380,217	20,352,981	22,457,948
3	Custom and excise levy	817,000	847,000	875,000	922,000	981,000
4	Demand Side Management Levy	51,000	53,000	152,000	140,000	170,000
5	IP Marker levy	1,000	1,000	1,000	1,000	1,000
6	Petroleum Products Levy (Pipeline)	31,000	32,000	33,000	35,000	37,000
7	VAT on vehicle sales	28,197,380	31,099,740	34,993,000	37,154,040	37,893,660
8	VAT on vehicle part sales / car repair services	3,909,640	4,126,080	4,496,380	4,788,700	5,009,760
9	Import duties on vehicle / parts	10,442,000	14,348,000	18,702,000	21,635,000	22,567,000
10	Licence fees	5,057,977	5,953,006	6,530,434	6,765,016	7,349,077
12	Fines / fees and permits	9,011,537	10,988,624	12,933,722	10,853,033	10,678,864
13	Toll fees	2,073,060	1,987,379	2,199,090	2,759,839	4,221,433
14	Toll fees concessions - minimum income*	3,987,937	4,605,700	5,029,190	5,420,129	5,846,819
15	Co2 emmissions	625,891	1,617,353	1,567,382	1,636,848	1,684,160
<b>TOTAL REVENUE</b>		<b>113,097,057</b>	<b>129,250,216</b>	<b>145,302,804</b>	<b>155,763,586</b>	<b>166,414,285</b>

Direct Road User Generated income	69,731,037	78,829,396	86,236,424	91,263,846	R	99,962,864,816
Indirect Road User Generated Income	43,366,020	50,420,820	59,066,380	64,499,740	R	66,451,420,000

- ❑ We required: R 81 903 373 968
- ❑ We collected: R 69 731 037 000
- ❑ Fuel levy delivered: R34 400 000 000

Exactly what should be ring-fenced ...

# Some growth rates ...

Road Infrastructure and Road Use Generated Revenue (R)						
#	Road user revenue paid via:	31-Mar-11	31-Mar-12	31-Mar-13	31-Mar-14	31-Mar-15
1	Fuel levy	34,417,577	36,602,263	40,410,389	43,300,000	47,516,564
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Period	2010 - 2011	2011 - 2012	2012 - 2013	2013 - 2014	2014 - 2015	Average
Annual Growth (%)		14.3	12.4	7.2	6.8	10.2
Fuel Levy		6.3	10.4	7.2	9.7	8.4
RAF		17.4	2.3	17.1	10.3	11.8
License		17.7	9.7	3.6	8.6	9.9
Toll		(4.1)	10.7	25.5	53.0	21.2
Toll Concessions		15.5	9.2	7.8	7.9	10.1
CPI (December)	3.4	6.4	5.7	5.3	5.3	5.2



# Per kilometer income collected ...

---

- Over / under collected:
  - Year 2010: 137 000 000 000 km's
  - *Annual income required:* R 81,903,373,968
  - Annual income **collected:** R 69 731 037 000
  
  - *So we required per km:* 59 cents per km
  - So we **collected** per km: 51 cents per km
  
- This is what we collected, not what we *spent*...



# How much did we *allocate* to roads?

- How much funding do we *allocate* to roads:
  - *Allocated Revenue*:
    - The *annual revenue* that is directly dedicated to funding roads in general
      - Without taking into account whether or not it is dedicated to specific road projects

R thousand	31-Mar-11	31-Mar-12	31-Mar-13	31-Mar-14	31-Mar-15
1 Toll fees	2,073,060	1,987,379	2,199,090	2,759,839	4,221,433
2 Toll fees concessions - minimum income	3,987,937	4,605,700	5,029,190	5,420,129	5,846,819
3 South African National Roads Agency - Non-toll network grant	4,065,177	5,262,566	5,934,636	6,394,541	7,515,300
4 South African National Roads Agency - Coal haulage network	0	464,782	667,959	648,910	665,498
5 South African National Roads Agency - Gauteng freeway improvement projec	0	5,750,000	0	0	0
6 Infrastructure: Overload control grant	5,390	0	0	0	0
7 Provincial roads maintenance grant - Roads maintenance	4,862,460	6,389,635	8,988,337	8,696,210	9,361,498
8 Public Transport infrastructure grant	3,699,462	4,988,103	4,803,347	4,668,676	4,968,029
	18,693,486	29,448,165	27,622,559	28,588,305	32,578,577

- Remember the R 69 731 037 000 ...



# What was the actual *expenditure* on roads?

## ❑ Road Expenditure:

- Annual expenditure on roads that includes both capital outlays and maintenance costs, per year, for roads supported by different levels of government and private roads
  - Rates and taxes, licences, etc.

R thousand	31-Mar-11	31-Mar-12	31-Mar-13	31-Mar-14	31-Mar-15
1 National Government	0	0	0	0	0
2 Provincial Government	14,269,254	15,993,253	17,634,059	18,571,254	20,169,802
3 Municipalities	9,893,480	12,260,308	12,181,889	13,564,588	14,507,056
4 State owned enterprises	18,972,179	15,852,104	15,191,965	15,253,520	14,584,260
The South African National Roads Agency	13,523,456	12,638,823	12,881,594	13,079,213	12,850,991
The South African National Roads Agency consessionaires	5,448,723	3,213,281	2,310,371	2,174,307	1,733,269
Road Accident Fund	0	0	0	0	0
Cross-border Road Transport Agency	0	0	0	0	0
Driving Licence Card Account	0	0	0	0	0
Road Traffic Infringement Agency	0	0	0	0	0
Road Traffic Management Corporation	0	0	0	0	0
	43,134,913	44,105,665	45,007,913	47,389,362	49,261,118

- Remember the R 69 731 037 000 ...

- Or 59 c / km was required, we collected 51 c / km but we only spent 31 c / km



# Answer

---

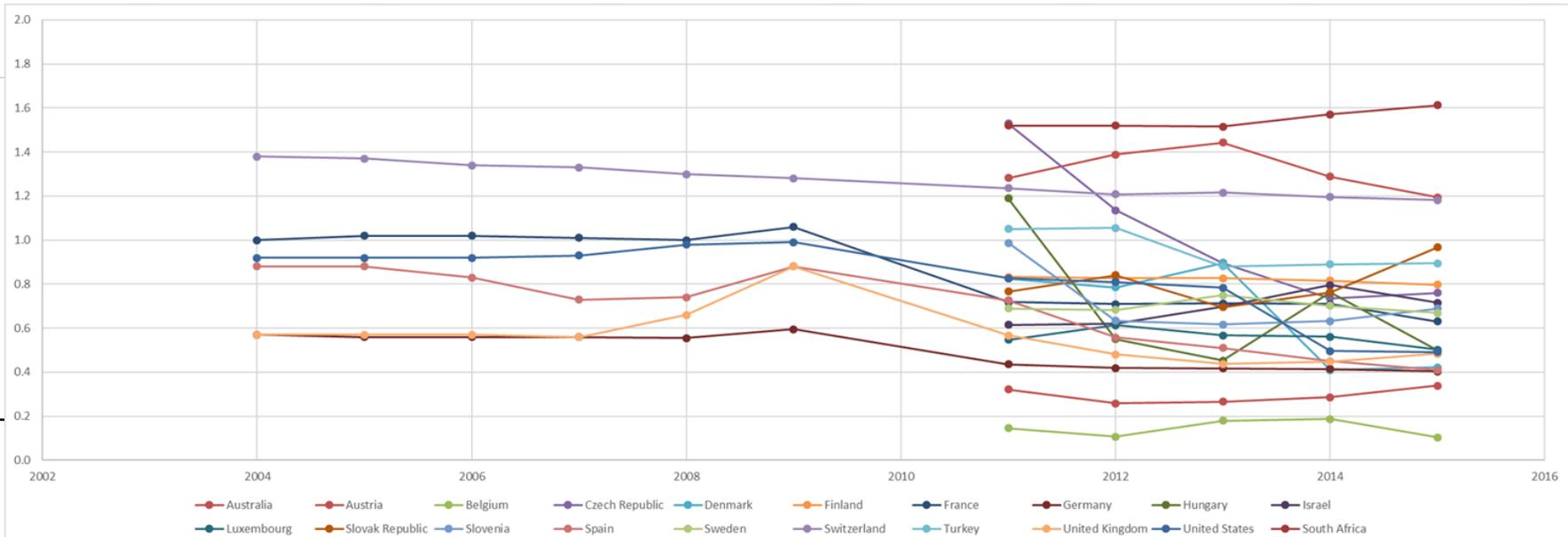
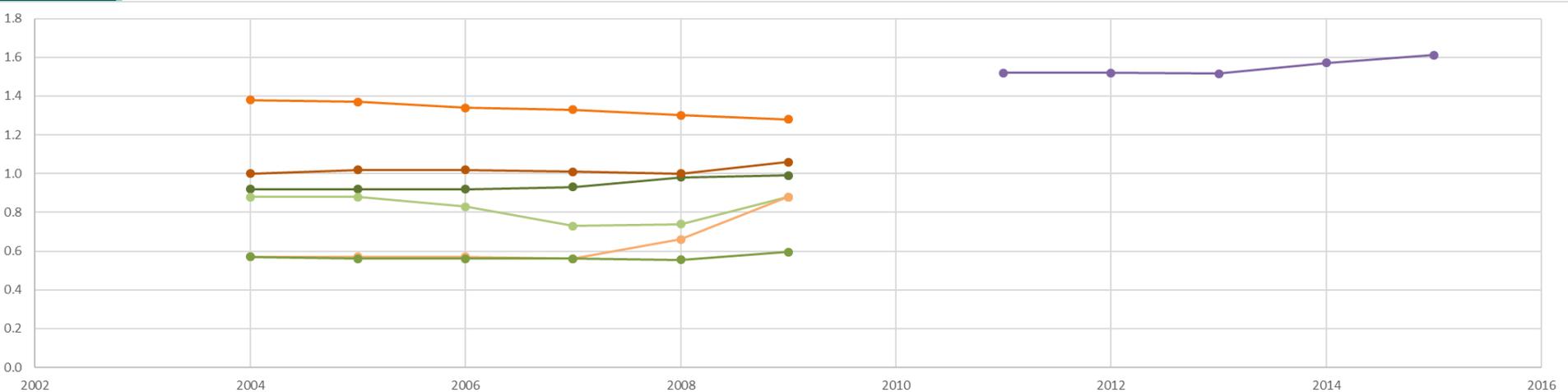
Easy ....

We have to spend more of what we collect!!!!



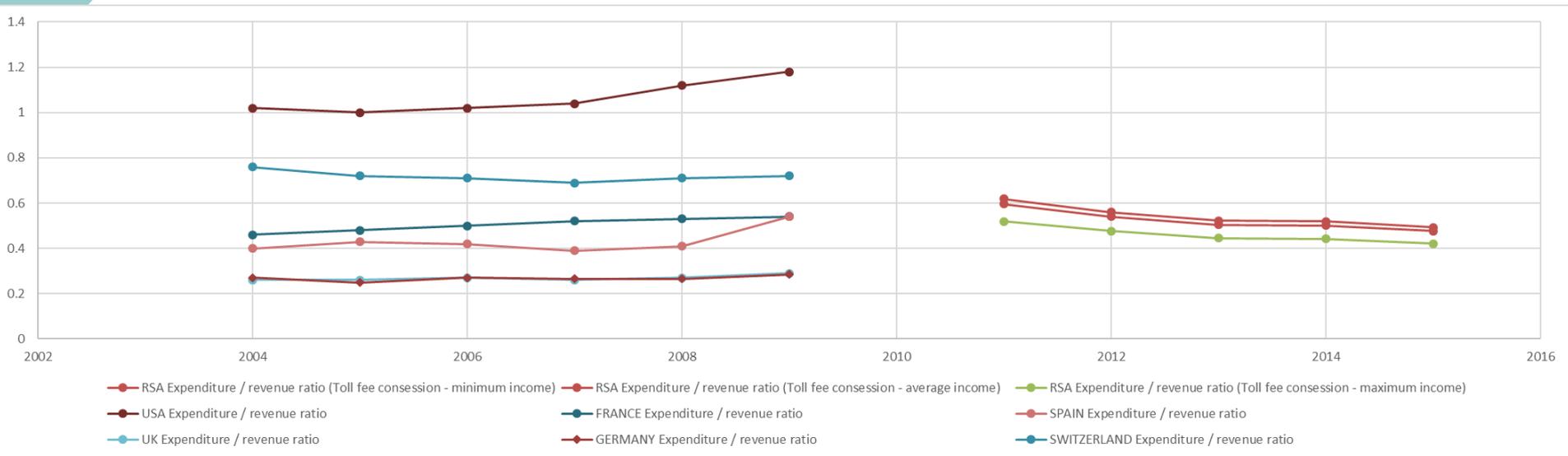
# South Africa compared to the rest of the world

## □ Road Expenditure compared to GDP



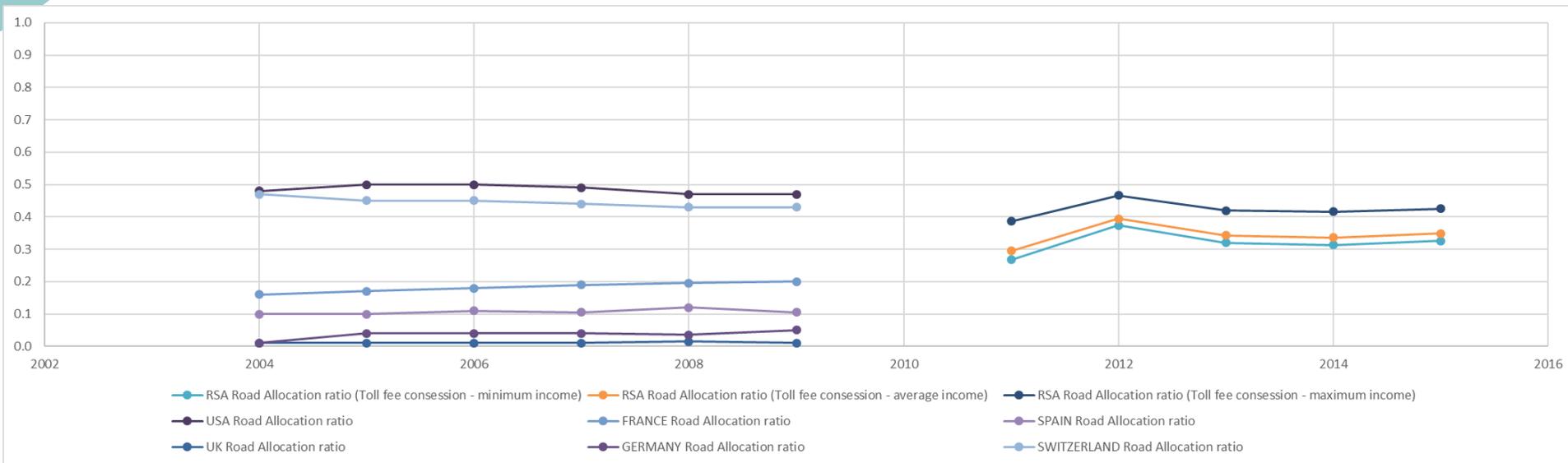
# South Africa compared to the rest of the world...

- ❑ Road infrastructure expenditure (RE) against road generated revenue (RGR)....
  - In short, for *every rand* that we *collect*, how much money do we *ACTUALLY* spend on road infrastructure



# South Africa compared to the rest of the world...

- Shows the *road allocation* against the road generated revenue
  - For every road collected, how much must be spent (is earmarked) from National Government



# Summary: Per kilometer ...

---

- What we required (2010):

What we require:	
1. 6%	0.59
2. 8%	0.71
3. 10%	0.84

- What we got in and spend (2010):

Year	2011	2012	2013	2014	2015
Road Generated Revenue: Cents per vehicle km's	0.50	0.54	0.57	0.58	0.62
Road Expenditure: Cents per veh/km on all roads	0.31	0.30	0.30	0.30	0.30



# Summary: Per kilometer ...

---

## □ What we required (2010):

What we require:	
1. 6%	0.59
2. 8%	0.71
3. 10%	0.84

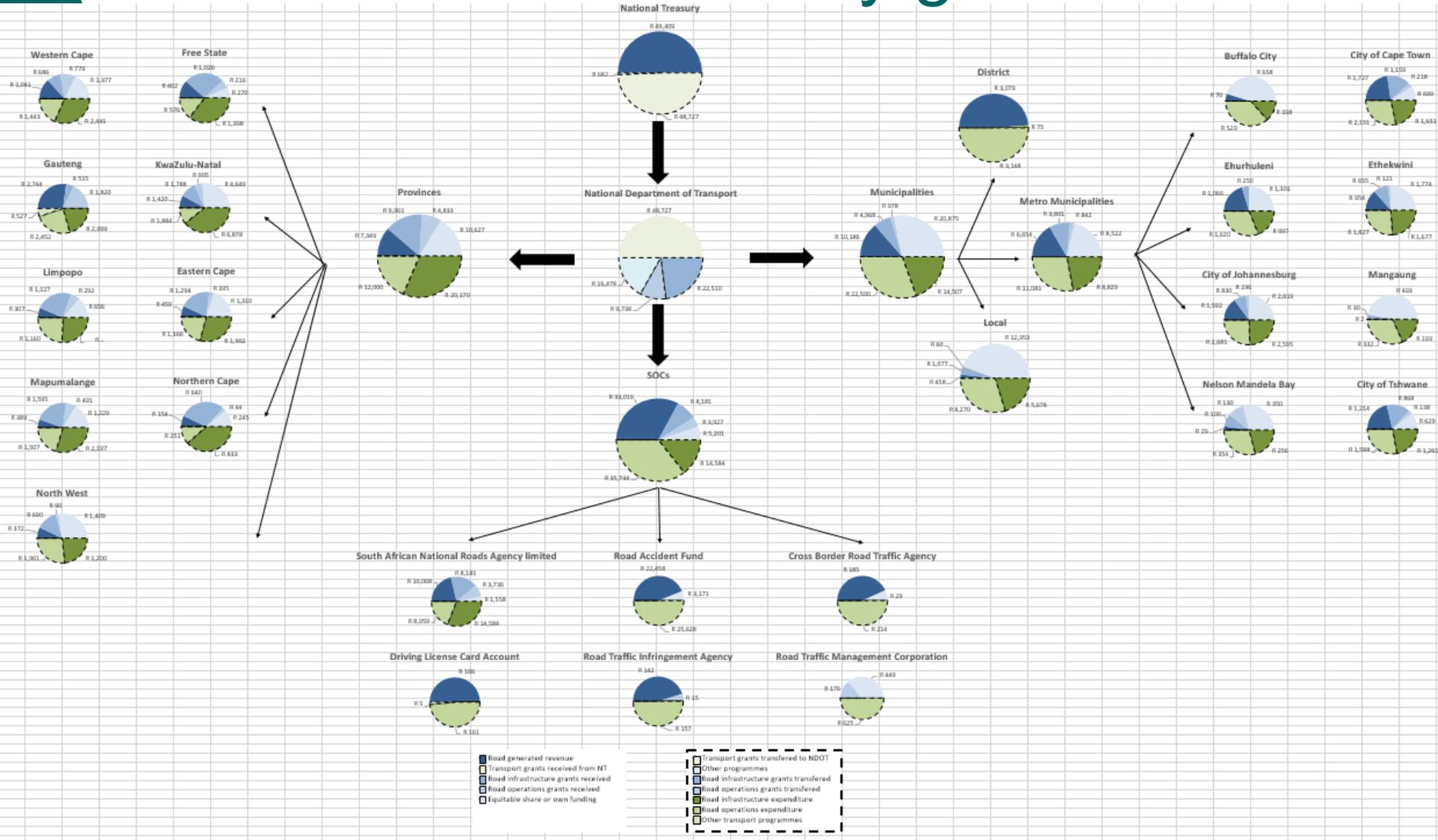
## □ What we got in and spend:

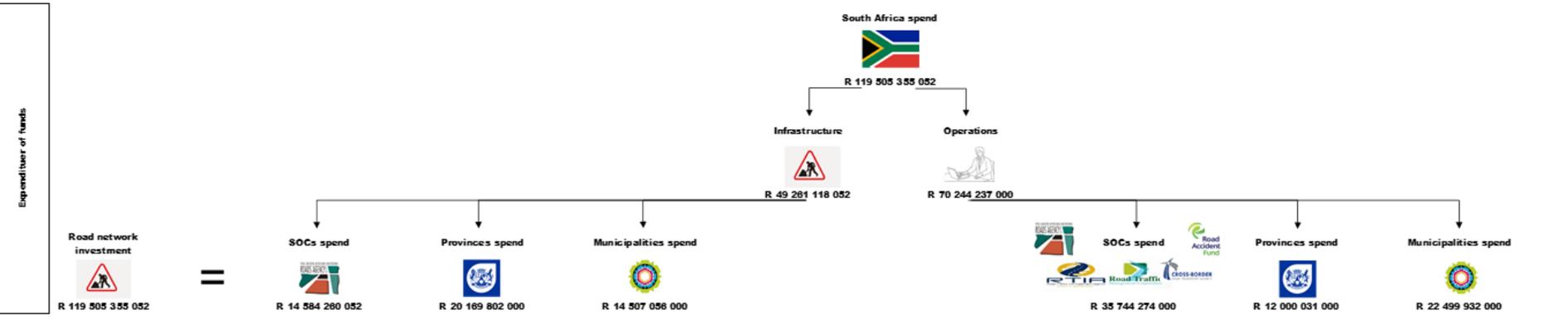
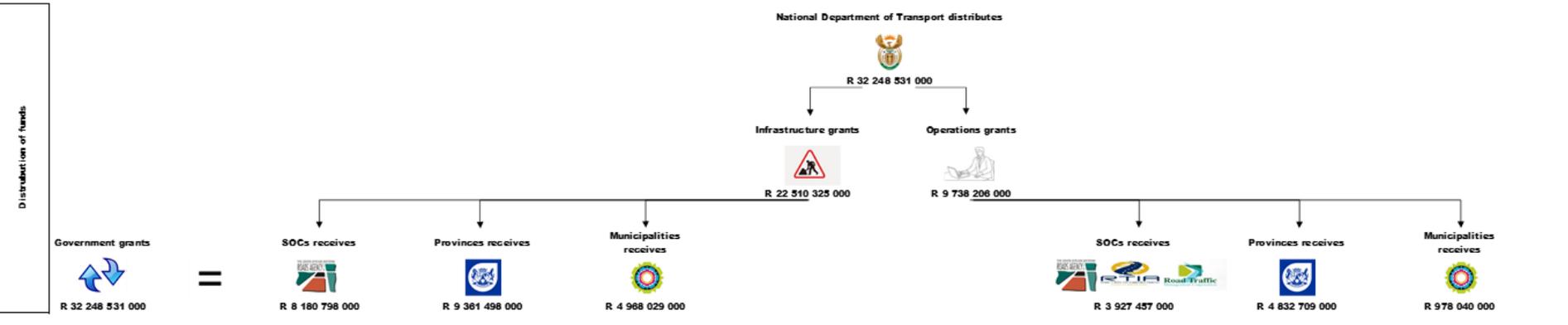
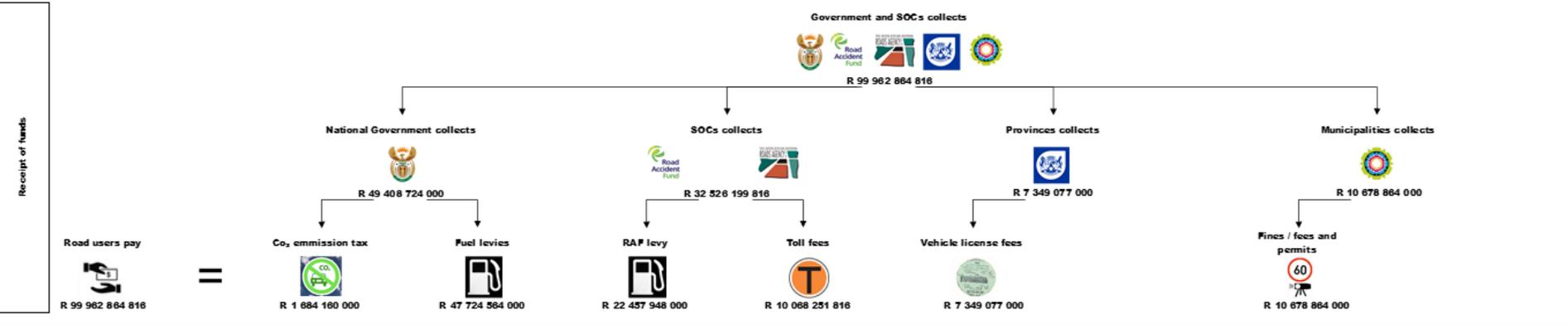
Road generated revenue per vehicle km	2,011
RGR: Prov and Mun road network	0.46
RGR: SANRAL road network (Tolls and non-tolls)	0.61

Road expenditure per vehicle km	2,011
RE: Prov and Mun road network	0.25
RE: SANRAL road network (Tolls and non-tolls)	0.46

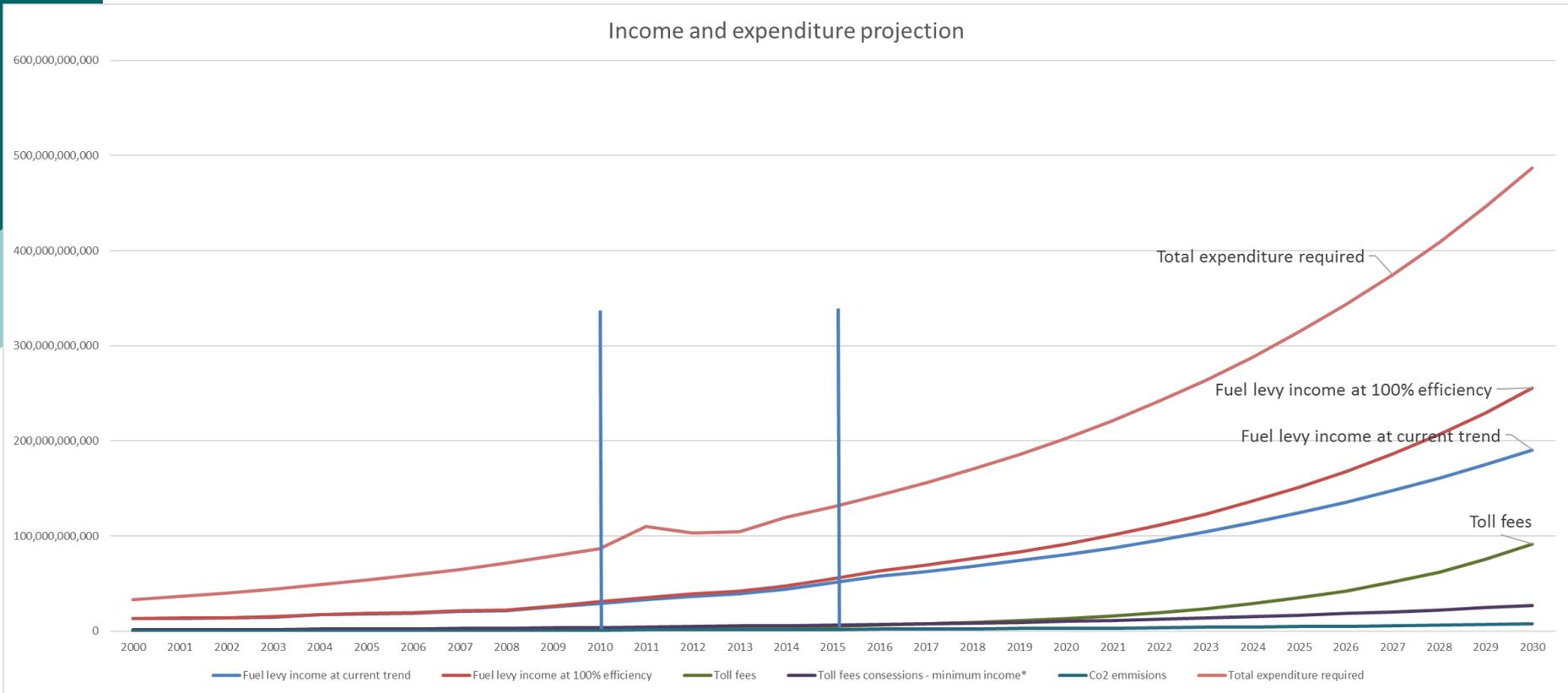


# Where does the money go ...?

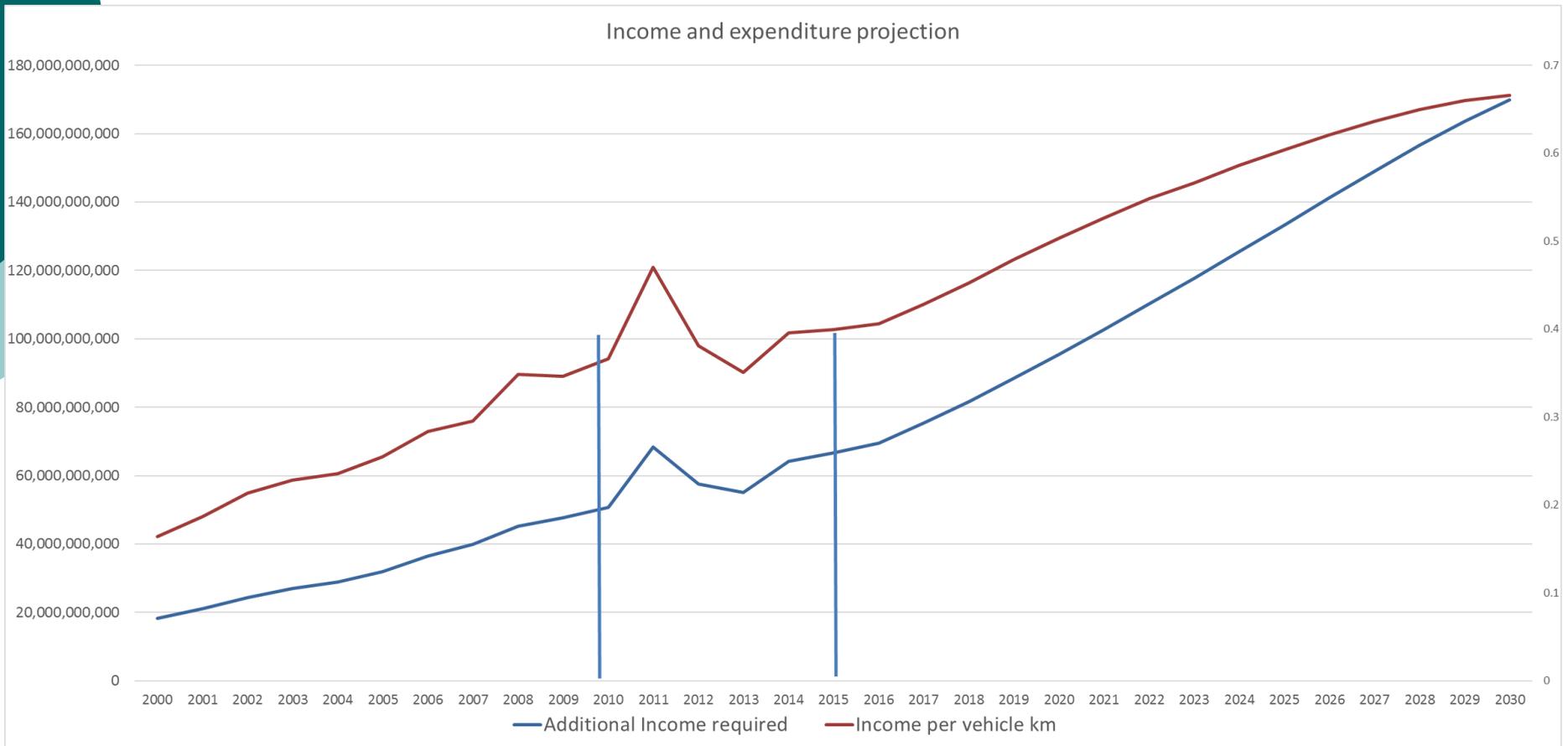




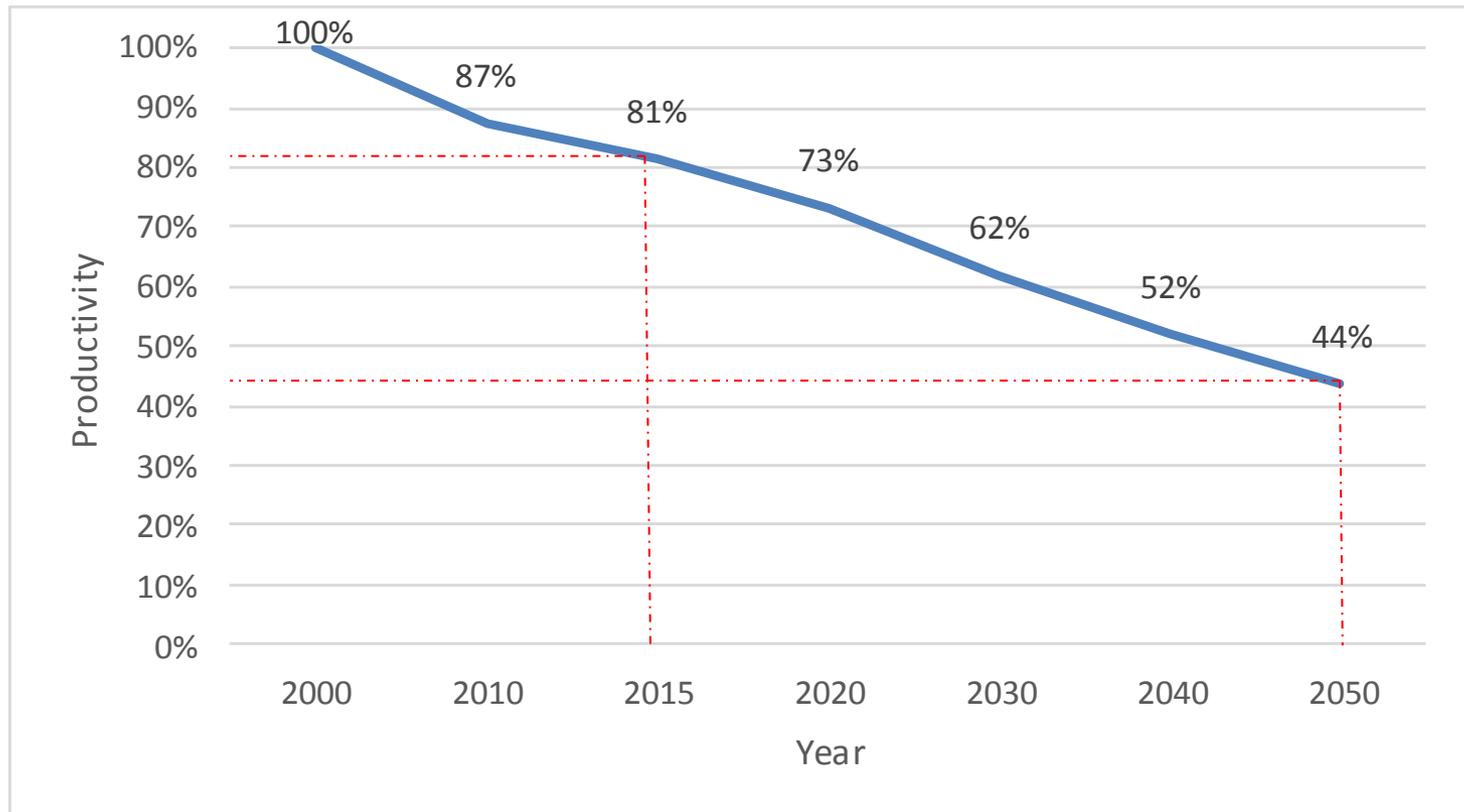
# The inadequacy of the fuel levy ...



# And what we require per vehicle km ...



# Problem (2): Fuel Levy Productivity...



---

# Only really one problem

In the current institutional, policy and legislative environment, nothing is possible ...



# So here my take on the findings:

---

1. This is probably as good as it gets for roads
  - ✓ From the perspective of the State's role
2. Enough resources in the system
  - ✓ System just have too many dependents
3. Our road network is our competitive edge
  - ✓ It is undeniable one of our three best pillars supporting growth
  - ✓ Our market / users may not be able to carry such a big system any longer (that is without help)
4. But who represent the industry?
  - ✓ Who is fighting for more funding for roads?



# And my take on solving the problem ...

---

## □ Three “R’s”

- Establish Road Users Authority
  - road users & civil society stakeholders
  - to encourage better management, demand for efficiency
- Establish Road Fund and Financing Guidelines
  - NOT RINGFENCED
  - Stable and predictable road financing through securing an adequate and stable flow of funds
  - Legislation, etc.
- Establish a Road Regulator
  - Simply to take care of the current conflicts and multiple demands on road funding.



# You do not have to believe me ...

---

- ❑ Ian Heggie ... somewhere in the 1980's
- ❑ (i) independent management by establishing professional management agencies run according to sound business practices to obtain value for money; (ii) ownership by involving road users and civil society stakeholders in the management of roads to encourage better management, demand for efficiency, and control of monopoly power; (iii) financing by stabilizing road financing through securing an adequate and stable flow of funds; and (iv) responsibility by securing clear definition, separation, and assignment of responsibilities with matching authority and performance targets. As these four reforms are complementary, all of them have to be implemented through a comprehensive reform program if the objective of effective and sustainable road management is to be obtained. Without all four, proper commercialization may not be attained, and only part of the ultimate objective of "good" road services may be achieved



# OK, but what about the funding ...

---

## 1. Fuel levy

- Get some 'recipients' out of the system
- Make the fuel levy more productive
  - Supplement for a *mass-distance charge on heavy vehicles NOW*

## 2. Public Private Partnership

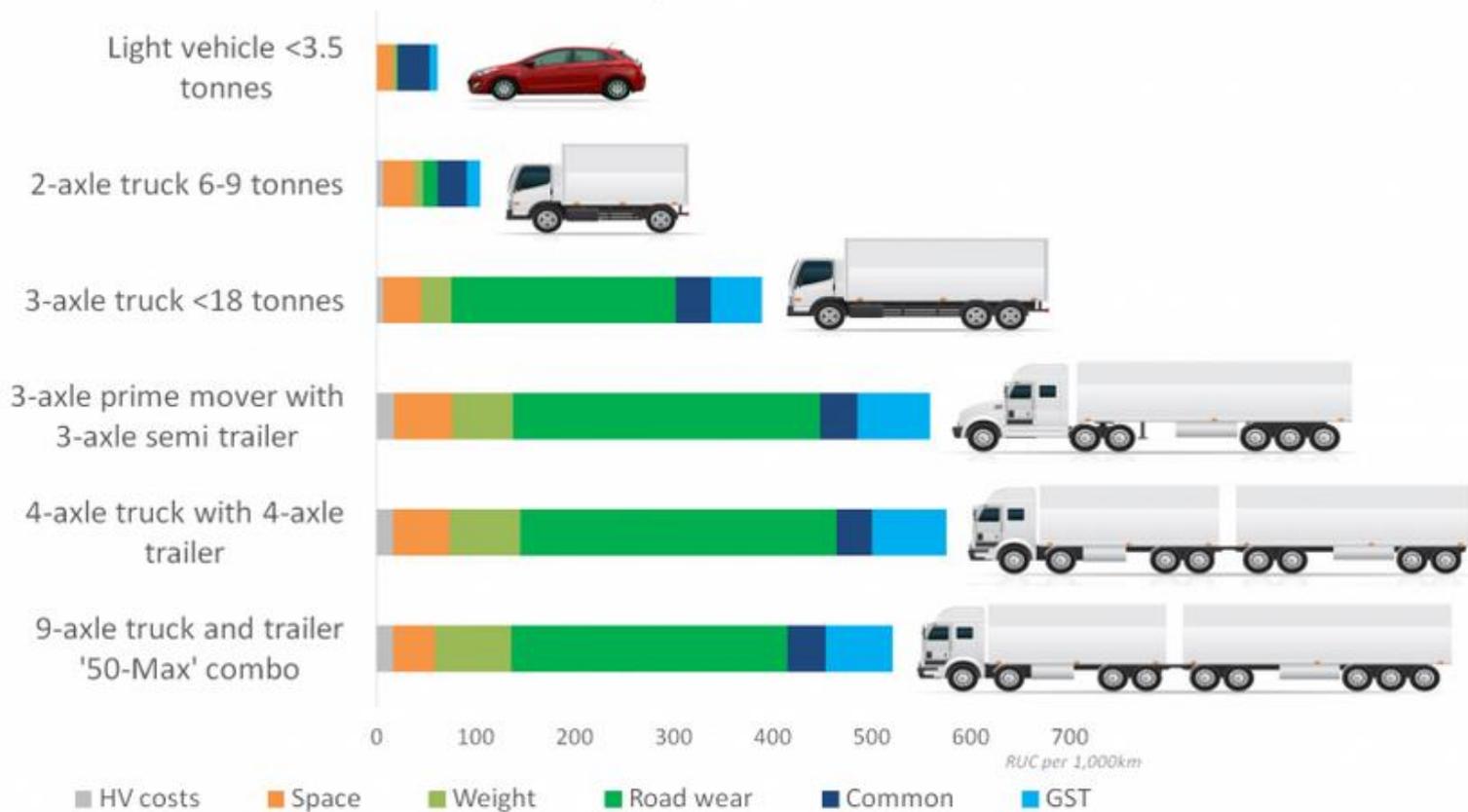
- ❑ SA want investment opportunities ...!
- ❑ Infrastructure banks is the way to go
  - ❑ And they can tackle some of the risks as well
    - High volume and high value corridors
    - Probably need new marketing and benefit approach
    - *Show me the benefit ...*

## 3. Congestion tax:

- Implement for city's
  - Takes care of Public transport



## RUC: A fair share by vehicle class



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Thank you

Any comments will be much appreciated:

[Skrygsmansun.ac.za](http://Skrygsmansun.ac.za)



# Recommendations

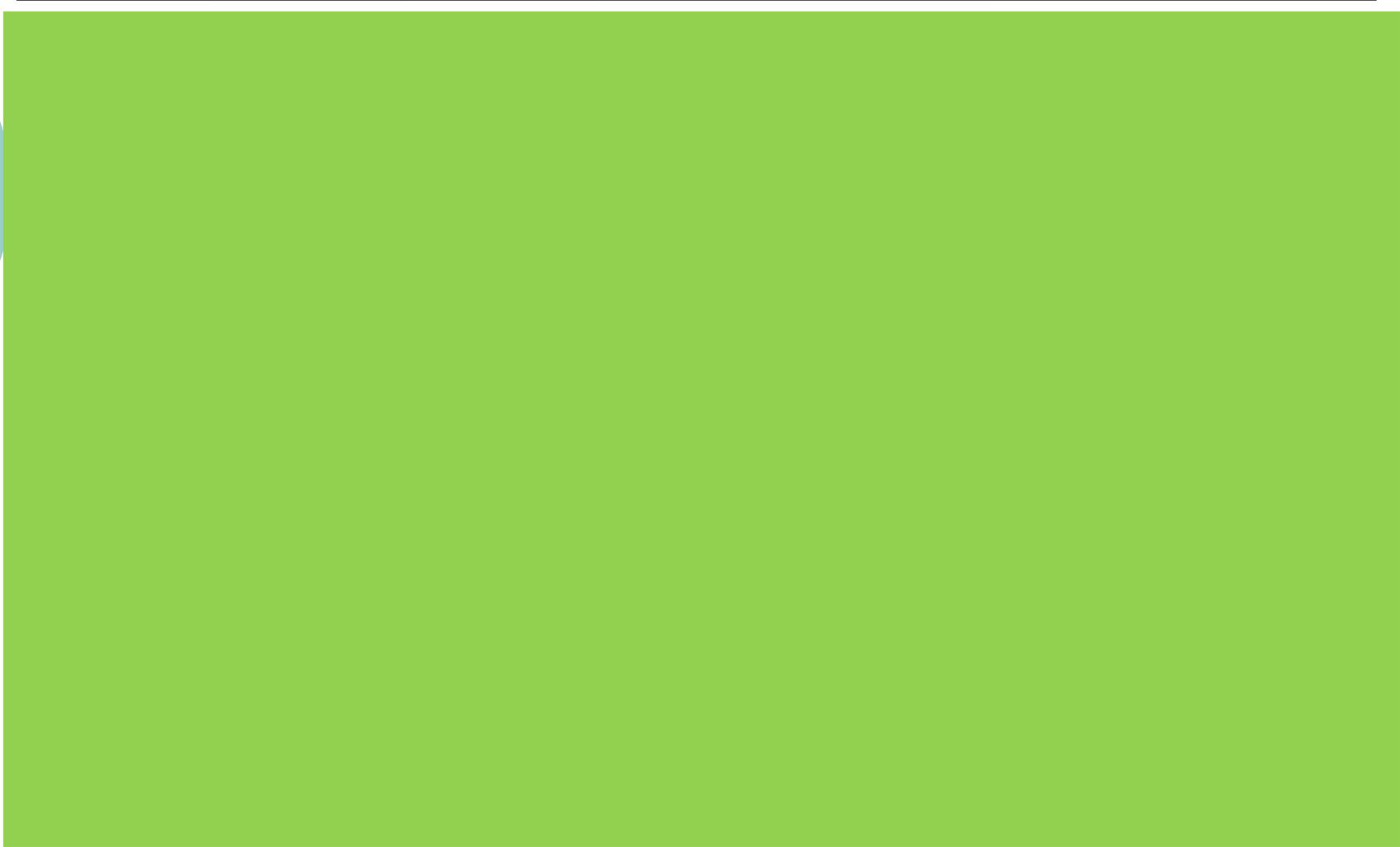
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- Discuss and market the system
  - Tell people about South Africa's system, how it works, how we calculate the costs etc.  
<http://www.transport.govt.nz/land/roadusercharges/w-here-does-the-money-go/#Vehicle6>
- Undertake some research:
  - Project impact of technology on income earning potential of roads
  - Forecast (disaggregate) vehicle fleet of South Africa
  - Determine scope and value of South Africa road network
  - Undertake Cost Allocation Study
  - Work out what the user should pay
    - Replicate Freeman's 1981 study

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○





# Solutions:

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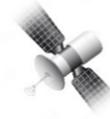
□ Really only *three options*:

1. Increase the fuel levy
  - Problems with *productivity*
  - *Regressive tax*
2. Alternative funding for public / urban transport
  - Congestion tax ?
  - Local government sources ?
  - Very limited ...
3. Public-private partnerships on high volume corridors
  - Toll roads
  - eToll vs Toll Roads
    - Benefits of toll roads completely misunderstood



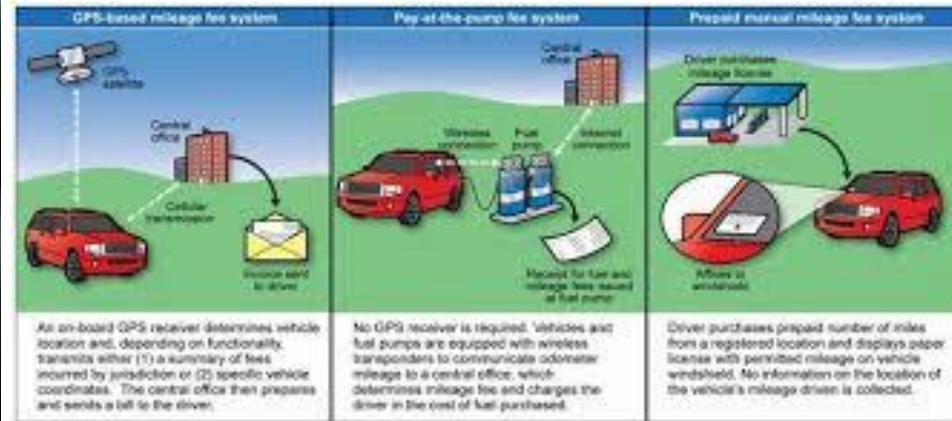
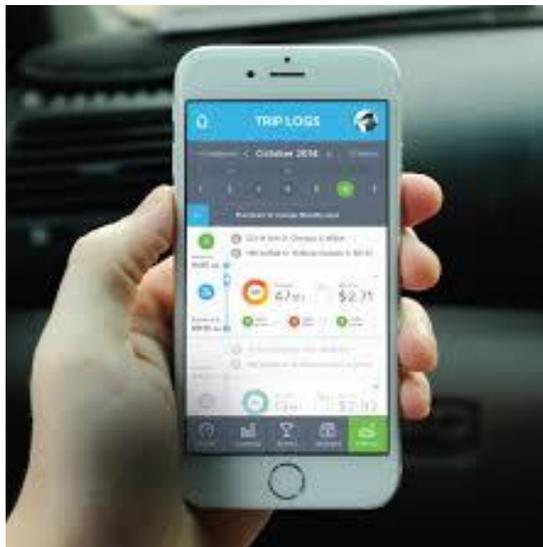
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# A kilometre-based road user charge system: Proof of concept study



Johann van Rensburg  
Stephan Krygsman







# Kilometre-based road user charge cost structure

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Vehicle class	Gross vehicle mass (kg)	Kilometre-based road user charge per km
Motorcycles	180	15,88c
Motorcars	1 200	23,10c
Minibuses	2 400	23,10c
LDV's - Bakkies	2 100	23,10c
Buses	14 800	92,94c
Trucks	14 200 – 49 000	138,03c
Other & Unknown	14 200	89,70c



# TAX INVOICE

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216 14th Avenue, Faldard, Roodepoort, 2195  
Private Bag 9955, Cresta, 2118  
MTN SP Reg. No. 1993/02/48/07  
VAT Registration No. 4130141247

**CUSTOMER CARE ENQUIRIES**  
Tel: +27(0)83 1 3008  
Tel: 808 (free from MTNSP cellphone)  
E-mail: mtnsp@mtn.co.za  
Website: www.mtnsp.co.za



**Mr Rael Finlay**  
Mr Rael Finlay  
103 The Vines  
Alphen Mill Road  
MAYNARDVILLE  
7834

VAT REG NO.:  
ACCOUNT NO.: A9056652  
CELLPHONE NO.: 081 423 7012  
INVOICE NO.: E584814233  
INVOICE DATE: 20/05/2012  
NAME: Mr Rael Finlay

Standard Services currently available on your package:  
BASIC DATA AND FAX  
BIS  
BASIC TELEPHONY  
CALLING LINE IDENTITY  
MOBILE ORIGINATING SMS

DATE	TRANSACTION	AMOUNT
20/05/2012	BLACKBERRY INTERNET SERVICE HIGH	51.75
20/05/2012	BLACKBERRY SERVICE FEE DISCOUNT	-51.75
20/05/2012	CALL LINE IDENTITY & MONTHLY FEE	7.02
20/05/2012	PROMO SERVICE FEE	86.84
20/05/2012	MTN 200 TopUp SUBSCRIPTION	175.44
20/05/2012	CLI MONTHLY DISCOUNT	-7.02

**TOTAL EXCLUDING VAT 262.28**

**VAT AT 14.00 % 36.72**

**TOTAL R 299.00**

CONFERENCE CALLING  
PACKET SWITCHED DATA  
ALLOW INTERNATIONAL DIALLING

Unless a query is raised in respect of the contents of this bill within 30 days from the date thereof, the contents shall be deemed to be correct.

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### LAST SIX BILLING PERIODS

11-2011	12-2011	01-2012	02-2012	03-2012	04-2012
R 398.00	R 299.00				

**AVERAGE SPENT R 315.50**

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## Tax invoice



L9243867-2  
OLIVER MICHAELS  
407 MONTFREERE  
1 CLAIR STREET  
WESTDENE  
BLOEMFONTEIN  
6523

Account number: L9243867-2  
Date: 03/07/2012  
Your VAT registration number:

### Account summary:

Date	Description	Item number	Reference	Amount	Total
04/09/2012	Balance Brought Forward			99.00	99.00
07/07/2012	Payment	SCZ1369863	159018663	-99.00	0.00
03/07/2012	Invoice	B227108838	726371238	99.00	99.00

### Invoice summary:

Cellular number: 0731456720  
Invoice number: B227108838  
Due date: 31/07/2012

Description	Amount	VAT	Total
<b>Subscription Services</b>			
Data Promotion - Top Up MyGig1	86.84	12.16	99.00
HSDPA Voice Tariff	0.00	0.00	0.00
VAS - Balance Notification	5.70	0.80	6.50
VAS - Free Balance Notification	-5.70	-0.80	-6.50
<b>Total Subscription Services</b>	<b>86.84</b>	<b>12.16</b>	<b>99.00</b>
<b>Subtotal</b>	<b>86.84</b>	<b>12.16</b>	<b>99.00</b>
<b>This invoice amount</b>	<b>86.84</b>	<b>12.16</b>	<b>99.00</b>

All data Contract customers on any data bundle will qualify for additional data to be used between midnight and 06am. e.g. if you have a MyVileg 250, you will get another 250MB of Night Owl. This offer excludes top up and Prepaid customers. \*18CS apply.

>>> 9 2060 1903 149 721 9

**Invoice Total 99.00**

Page 1 of 1

Your bank account will be debited with the full outstanding balance as reflected on this statement on the 1 August 2012  
Vodacom (Pty) Ltd. Registered office: P O Box 3306 Cramenvue 2060. Company Registration No. 1993/003367/07 V A T Registration No. 401013921



# WOOLWORTHS FINANCIAL SERVICES



JANE@GMAIL.CO.ZA

STATEMENT DATE	12 SEP 2013
PAYMENT DUE DATE	07 OCT 2013
ACCOUNT NUMBER	5708 8501 **** *
INSTALLMENT FREQUENCY	Monthly

Woolworths Financial Services PO Box 5553 Cape Town 8000  
 21 Howe Street, Observatory, Cape Town, 7925  
 Telephone 0861 50 20 20 Fax 0861 99 91 94  
 Woolworths Financial Services Pty Ltd Reg no 2006/009277/07  
 A registered credit provider NCRCP/49 Email: www@woolworths.co.za

## STORE CARD STATEMENT

YOUR TRANSACTION DETAILS

Page 1

DATE	STORE	DESCRIPTION	AMOUNT
		OPENING BALANCE	438.33
13 AUG 2013	NICHOL WAY - JHB	PURCHASE -FOODS,CONDIMENTS DRE	302.03
15 AUG 2013	NICHOL WAY - JHB	PURCHASE -FOODS	171.74
19 AUG 2013	CAPE TOWN AIRPOR	PURCHASE -CUT FLOWERS,FOODS,PL	152.15
22 AUG 2013	NICHOL WAY - JHB	PURCHASE -FOODS	279.67
23 AUG 2013	SUMMIT ROAD	PURCHASE -PURCHASE	55.19
25 AUG 2013	NICHOL WAY - JHB	PAYMENT - THANK YOU	400.00 CR
12 SEP 2013	HEAD OFFICE	INTEREST	70.36

### CLOSING BALANCE

4949.47

GET PEACE OF MIND BY ADDING BALANCE PROTECTION TO YOUR ACCOUNT. TO FIND OUT MORE CALL 0861 50 20 40.  
 PLEASE NOTE RATE CHANGE TO 14% ON BALANCES ABOVE R10 000 AND TO 17% ON BALANCES BELOW R10 000 EFFECTIVE 27 JULY 2012.

Minimum Payment	R371.21	Overdue		Credit Available	R251.00
Payment Due Date	07 OCT 2013	Credit Limit	R5200.00	Closing Balance	4949.47

Please note: If payment of full balance is not received by payment due date, interest is charged on full balance and on new purchases.

<b>Banking Details:</b>		<b>Beneficiary Reference: Please use your Woolworths account number as it appears on your Woolworths Store Card as the payment reference</b>	
Bank: ABSA Bank	Bank Account Number: 4072263822	Office: Bluegum Bosch	Service ref: 0477140418
Account Holder: WFS Instore Cards Direct Deposits	Branch Code: 633005	System no: 9259900885	Cycle: A
	Swift Code: ABSAZAJJ	Payment code: 2011	Control code: 088

468010146  
N E-UG-48

**GET THE CREDIT CARD THAT GIVES YOU MORE WITH UP TO 3% BACK IN WVOUCHERS.**

Telkom invoice for MRS NA TOLON 0477140418

Page 1 of 6



MRS TOLON  
 832 BLUEGUM ST  
 PHUTHADITJHABA  
 BLUE GUM BOSCH BLOCK A  
 9342

This is a tax invoice

**Enquiries**  
 For account enquiries, fault reporting and to order a new product, see page 4 for contact details.

### Summary of your account

Previous invoice	Balance brought forward	R2,372.79
Opening balance	Amount overdue	R2,372.79
This invoice		R214.44

### We'll need this information

Account no 259900887796  
 Service ref 0477140418  
 Invoice no 206A1017262d  
 Invoice date 4 Jun 2012  
 Due date 26 Jun 2012  
 Your VAT reg no  
 Group no 77960  
 Payment code 2011  
 Control code 088

### This invoice (Jun 2012)

Rental		R155.26
<b>Subtotal</b>		<b>R155.26</b>
VAT	14%	R21.74
Interest		R37.44
<b>Total (this invoice)</b>		<b>R214.44</b>

### Your main Telkom office

PO Box 970  
 Durban, 4000

### Payment remittance advice

<b>Please pay as follows:</b>		
Previous invoice	Overdue, please pay immediately	R2,372.75
This invoice	Please pay on or before 26 Jun 2012	R214.45
<b>Amount now payable</b>		<b>R2,587.20</b>

Coins discontinued	Carried forward to next invoice	R0.03
Closing balance	Amount due	R2,587.23

**This full page must accompany payments at a counter**  
 Telkom SA Ltd, Reg no 1991/005476/06, VAT no 4680101146

### Mail Payment slip

(See "By mail" on page 2)

Date issued 4 Jun 2012	Office Bluegum Bosch	Service ref 0477140418	Cycle A
Group no 77960	System no 9259900885	Payment code 2011	Control code 088
		Amount payable R2,587.20	



Amount you are paying

R .

<<<<< 9 2021 7796 2599 0088 28 >>>>>



UNIVERSITEIT·STELLENBOSCH·UNIVERSITY  
 jou kennisvennoot·your knowledge partner

# Kilometre-based road user monthly invoice



Stellenbosch University  
Private bag X1  
Matieland  
7602

Account number 000001  
Reference number 000001

Road User Charge Invoice

Tel: +27 21 808 2879  
Fax: +27 21 808 3406  
E-mail: javrens@sun.ac.za  
Correspondence: Researcher  
Private bag X1  
Matieland, 7602  
Web address: www.sun.ac.za



Name Participant 1  
Address N/A  
Suburb N/A  
Postal code N/A

Account summary as at	2015-09-01	Due date	2015-09-29
For vehicle:	GPS1		
Previous account balance		R	-
Less payments	2015-07-31	R	-
(a)	R -	R	-
Latest account - see overleaf		R	31,76
Current amount due (b)	2015-09-29	R	31,76
	Total (a) + (b)	R	31,76
Total (a) + (b) above	R		31,76
Total liability	R		31,76

Travelling information

Distance travelled (km) 551,41  
Time spend travelling 24:24:28  
Ave speed (km/h) 24,21

Travelling cost

Vehicle running cost R 749,91 Fuel cost R 481,07  
Vehicle fixed cost R 1 345,43  
Total vehicle cost R 2 095,35

Please note:

- (1) Billed for use of National, Provincial and Municipal Roads
- (2) Billed according to distance travelled
- (3) Billed according to time of day travelled
- (4) Interest will be charged on all amounts still outstanding after due date
- (5) You may not withhold payment, even if you have submitted a query concerning this payment

Pay points: Stellenbosch University cash offices or the vendors below

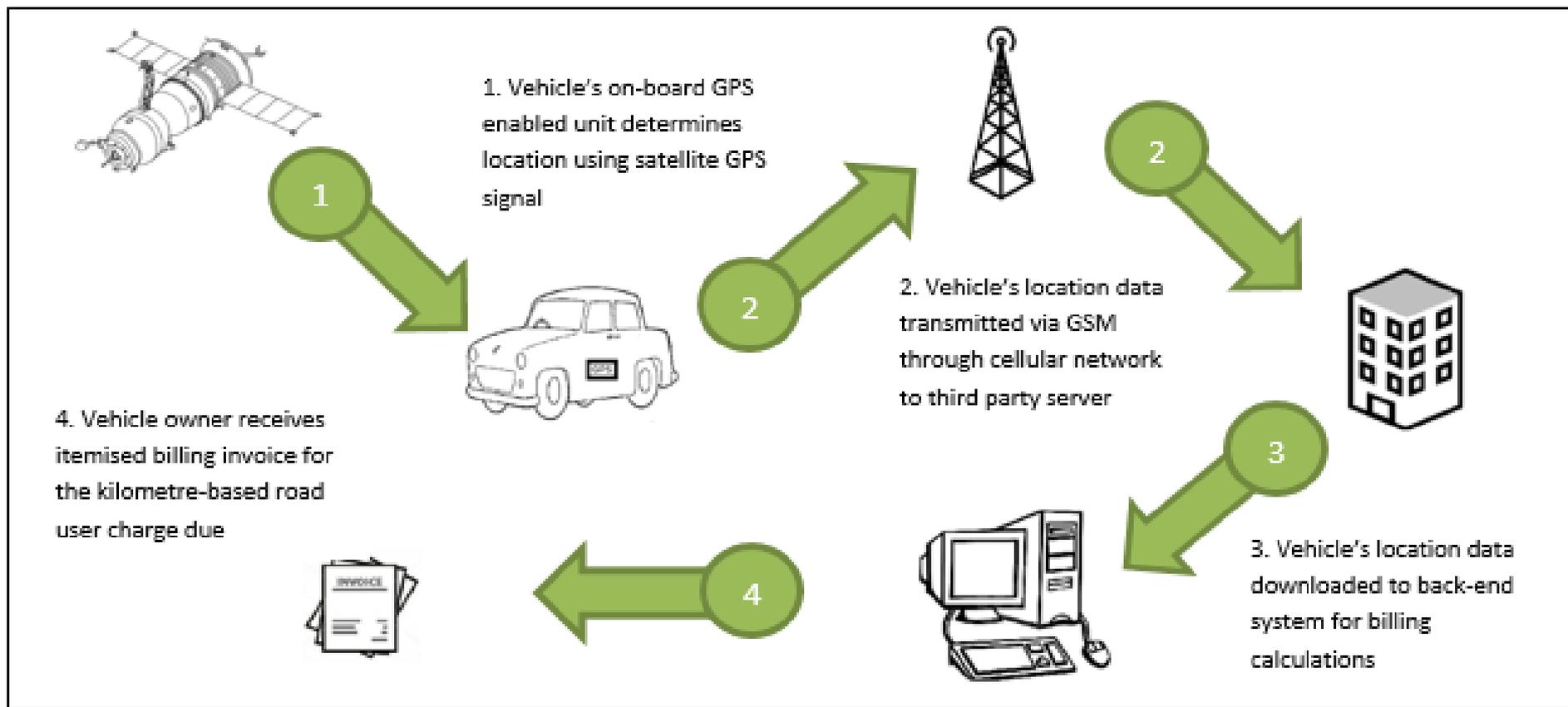
ABSA Bank	PayCity	Checkers	SPAR
Shoprite	WOOLWORTHS	Pick n pay	Post office

Account details as at	2015-09-01	Account number	000001
Charge - Period	2015-08-03 to	2015-08-31	28
551,407495 km	x	0,231	R 127,38
Fuel rebate - Period	2015-08-03 to	2015-08-31	28
37,4957097 litres	x	2,55	R 95,61
			R 31,76

Current account: Total due -

R 31,76





(Van Rensburg and Krygsman, 2015)

# Conclusions

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- ❑ Funding for roads in SA relatively high
- ❑ Massive demands placed on funds under existing institutional distribution arrangement
- ❑ Fully dedicated road fund not possible or realistic in South Africa
  - Probably deliver too little income
- ❑ No understanding of user pay principle or funding needs
  - Users probably already pay too much



# Dearth of guidelines, norms and standard

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- ❑ There is a dearth of appropriate practice guidelines, manuals and systems for the maintenance of municipal infrastructure.
- ❑ For example, there are no published norms with respect to the resources that are required to enable good maintenance practices to be achieved. Without question there is a need for guidelines on these resources, expressed in terms such as there is really very little quality documentation



# Recommendation

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- ❑ We must classify roads;
  1. Public roads
  2. Private roads (toll)
  3. Social roads (
- ❑ Determine funding approach for them separately
  1. Two ways forward:
    1. 1. increase income
    2. Decrease dependents on the systems
  2. Implement second best approach:
    1. The system as a whole should be costed" at SRMC" .  
But every component has elements of market inefficiency and you can cross-subsidise



# Conclusion and Recommendations (Financial)

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- ❑ There is more than enough money in the system (for now)
  - ❑ Pressures
    - Declining productivity of fuel levy (structural pressure)
    - Additional demands on funds (organic pressure)
    - Socio-economic pressure (
    - Political pressure
  - ❑ Not sure our institutional framework (that is Government allow for any alternative approach)
  - ❑ It is really impossible to determine any sustainable funding source in the current instructional and administrative framework
- 
- ❑ Need institutional reform leading to some coordination representative body that speaks from



# Make distinction

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- ❑ Urban roads needs
- ❑ Public transport
- ❑ Freight



# A dedicated funding stream...

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- A dedicated funding stream As we have implied already, a sector's ability to draw on dedicated, protected revenue streams is an important factor in its ability to plan and deliver a longterm investment programme. In the case study countries we reviewed, this is most apparent in the use of tolling. In most of the countries and projects we have observed, tolling provides dedicated revenues to support a project finance approach. In other words, the construction and maintenance of a particular road is funded by toll revenues on that road. In some of our case study countries, we have also observed approaches through which toll revenues associated with one highway can be used to fund upgrades to other highways nearby. The clearest example of this approach lies in the privatised French networks (e.g. SANEF, APRR etc), although we are also aware that concession 'rebalancings' in Spain have been agreed to fund enhancements which were not envisaged in the initial concession agreement. Although acceptance of tolling is a key factor underpinning successful highways investment plans in other countries, it is not the only option we have identified for securing dedicated funding streams for the sector. The Highways Trust Fund (HTF) in the USA has, over the years, provided the primary source of funds for the Federal Aid Highway Program, whereby taxes paid by road users are used to finance highway investment. This demonstrates the feasibility, in principle, of approaches involving hypothecation of motoring taxes as an alternative revenue source to direct tolling. At present, England's strategic road network does not generate and retain its own revenue streams. User charging exists for a very limited proportion of the network, and where surplus receipts are generated (e.g. in relation to the Dartford Crossing), they are returned to the Treasury. Similarly, where tolled crossings are owned and operated by local authorities (e.g. the Tamar or Humber bridges), authorities are not permitted to set tolls at a level which would generate more revenue than would be required to fund the construction and maintenance of the tolled route itself. Furthermore, the Treasury has been reluctant, historically, to support hypothecation of tax receipts for any particular purpose. Nevertheless, our view is that an important step towards tackling the investment backlog and dealing with the challenges of future growth will be to put in place a dedicated and protected funding stream for the strategic road network, which can underpin the investment required. International experience demonstrates that that can be achieved either through hypothecation, or an approach which draws on toll revenues. Although this change could be made under the Highways Agency's present structure, continued direct control from Whitehall would mean that the Agency and its investment programme would remain vulnerable to cuts. Alternative approaches – consistent with international experience – would be to establish the HA as a more arm's length public sector body with its own duties, powers and identity, or to privatise it so 7.4



# Part of the solution

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- ❑ Market, market, market
- ❑ Communicate, communicate, communicate
- ❑ Regulator
- ❑ Policy framework



# compare with international experience

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a limited investment plan and weak long-term funding commitment. The Highways Agency's current Business Plan has only limited focus on the need to develop the network, and the Agency has a relatively short-term, heavily constrained funding settlement; • the absence of any long-term strategy to address future demands likely to be placed on the network. While government produces demand forecasts stretching to 2035, neither the Agency nor government is under an obligation to produce long-term plans for addressing these demands; • the absence of significant direct user charges or any other dedicated source of funding to support delivery of the investment required. While other countries' highways networks (and other sectors in the UK) can retain and reinvest user charges, the limited user charge receipts collected by the Agency are passed back to the Treasury in the same way as proceeds from vehicle excise duty (VED) and fuel taxes paid by road users.



# Roads An International Perspective with Lessons for the UK

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- highly centralised investment planning and procurement, in contrast to other countries, where responsibility for funding highways is shared with regional authorities, and the private sector has a greater role; • a less positive attitude towards the use of private finance, and a lack of commitment to developing and improving the effectiveness of PPP concession contracts. While the UK pioneered the use of PPP for road schemes in the early 1990s, other countries have since embraced these concepts, and have shown a greater propensity to innovate and improve them in ways which address some of the problems identified in this country. Moreover, unlike the UK, accounting rules in other countries provide a financial advantage to governments from the use of private finance concession contracts; and • a lack of clarity from government over what role the private sector and private finance should be playing in the development of the network. A number of commentators have advocated the use of a RAB-based model for the highways sector, but government hitherto has shown little interest in pursuing that option.



# Conclusions and recommendations

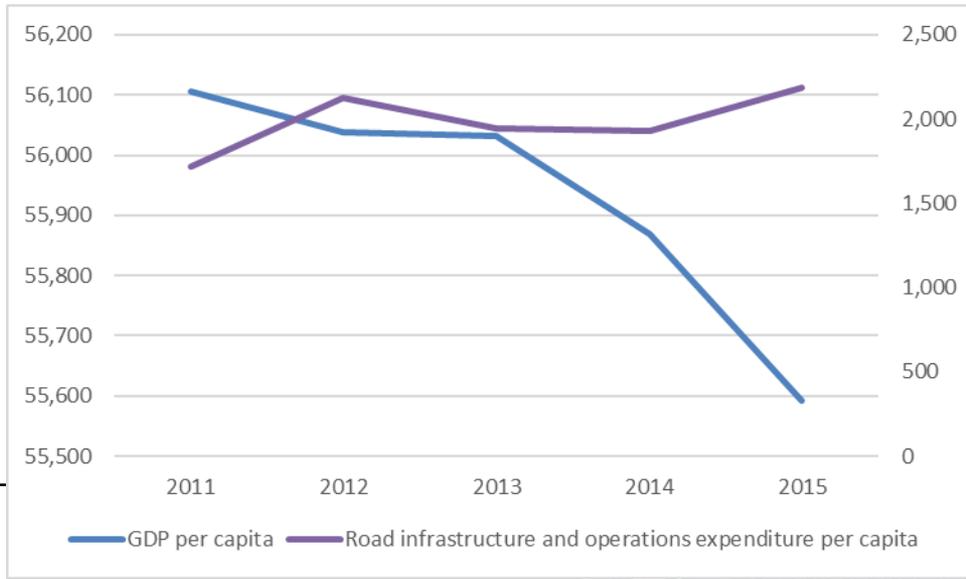
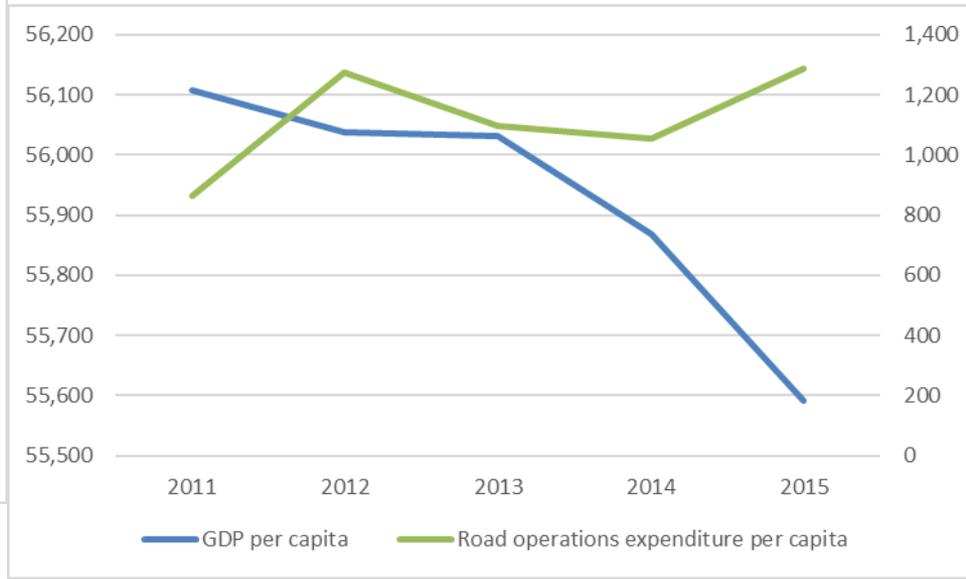
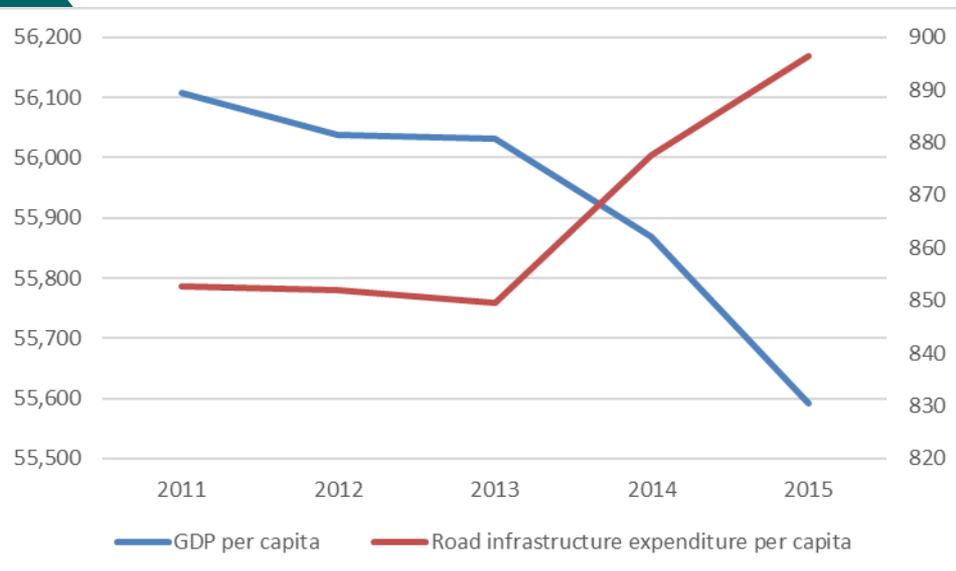
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- acknowledgement of the scale of the funding challenge facing England's highways sector; • the need for a long-term strategy for the network which is sustainable from an economic, as well as environmental perspective. This should address 1.3 10 Providing and Funding Strategic Roads – An International Perspective with Lessons for the UK the challenges of population growth and rising vehicle usage, to ensure that road infrastructure facilitates rather than impedes economic growth; • recognition that to deliver the investment required, the highways sector – like other classes of infrastructure – needs stable long-term funding streams, based on user charges and/or hypothecation of some motoring taxes. This will reduce the sector's vulnerability to central government budget cuts; and • acknowledgement that the extent of Whitehall's responsibility for funding highways investment in England has failed, so far, to deliver the funding required, both for the strategic road network and key regional routes – and that the current absence of regional government structures and funding powers in England remains a major impediment.







# Income sources ...

		EMCS					OECD					
		South Africa	Brazil	Russia	India	China	Australia	New Zealand	Germany	UK	USA	Canada
2004	Fuel levy: Petrol	10	39	10	42	3	40	32	101	111	9	23
	% of petrol price	26.3%	46.4%	18.2%	48.3%	1.9%	47.1%	51.6%	69.2%	71.2%	16.7%	33.8%
	Fuel levy: Diesel	9	5	1	18	0	39	0	85	116	13	24
	% of diesel price	25.3%	10.2%	2.2%	29.2%	0.0%	47%	9.8%	65.9%	72.5%	22.8%	38.3%
2006	Fuel levy: Petrol	10	42	11	46	3	35	40	100	109	11	28
	% of petrol price	17.1%	33.6%	14.1%	45.2%	1.9%	37.8%	40.9%	64.6%	66.6%	17.9%	33.0%
	Fuel levy: Diesel	9	3	1	10	0	35	8	77	112	13	14
	% of diesel price	15.3%	3.4%	0.9%	13.5%	0.0%	37.4%	11.4%	55.9%	64.5%	18.2%	17.3%
2008	Fuel levy: Petrol	11	37	10	40	3	26	42	98	79	8	21
	% of petrol price	12.5%	29.6%	10.8%	36.9%	1.5%	34.6%	38.6%	52.6%	61.9%	15.1%	27.6%
	Fuel levy: Diesel	10	3	1	10	0	31	10	80	98	11	14
	% of diesel price	9.9%	2.8%	0.7%	14.7%	0.0%	33.0%	11.4%	51.3%	57.8%	14.0%	15.3%
2010	Fuel levy: Petrol	15	57	15	61	4	47	66	118	122	13	38
	% of petrol price	21.5%	36.0%	17.4%	53.3%	2.3%	37.0%	44.8%	62.2%	63.8%	17.0%	31.6%
	Fuel levy: Diesel	14	4	1	13	0	48	11	91	124	15	18
	% of diesel price	20.7%	3.2%	1.0%	16.3%	0.0%	38.9%	11.4%	54.3%	62.8%	17.6%	16.5%
2012	Fuel levy: Petrol	18	59	15	64	5	47	71	109	129	13	39
	% of petrol price	17.9%	42.5%	15.3%	50.9%	2.1%	33.7%	40.3%	55.6%	59.5%	13.6%	29.2%
	Fuel levy: Diesel	16	4	1	15	0	54	16	89	131	14	20
	% of diesel price	16.7%	4.1%	0.8%	17.6%	0.0%	34.5%	13.3%	47.5%	57.3%	13.4%	16.4%

	R 9.42 Petrol'11	R 8.78 Diesel'11	R 11.23 Petrol'12	R 10.37 Diesel'12	R 13.08 Petrol'13	R 12.13 Diesel'13	R 14.32 Petrol'14	R 13.39 Diesel'14	R 11.27 Petrol'15	R 10.00 Diesel'15
Tracer dye levy	R -	R 0.00	R -	R 0.00	R -	R 0.00	R -	R 0.00	R -	R 0.00
Secondary distribution	R -	R -	R -	R -	R -	R 0.26	R -	R 0.12	R 0.13	R 0.11
Secondary storage	R -	R -	R -	R -	R -	R 0.26	R -	R 0.17	R 0.17	R 0.17
Equalisation fund	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -
Slate Levy	R -	R -	R 0.04	R 0.04	R 0.11	R 0.11	R 0.15	R 0.15	R -	R -
Petroleum products levy	R 0.00	R 0.00	R 0.00	R 0.00	R 0.00	R 0.00	R 0.00	R 0.00	R 0.00	R 0.00
Incr. inland transport recovery levy	R 0.03	R 0.03	R 0.03	R 0.03	R 0.03	R 0.03	R 0.03	R 0.03	R -	R -
Custom and excise duty	R 0.04	R 0.04	R 0.04	R 0.04	R 0.04	R 0.04	R 0.04	R 0.04	R 0.04	R 0.04
DSML	R 0.10	R -	R 0.10	R -	R 0.10	R -	R 0.10	R -	R 0.10	R -
Delivery cost	R 0.11	R 0.11	R 0.21	R 0.21	R 0.25	R -	R 0.29	R -	R -	R -
Transport cost	R 0.16	R 0.16	R 0.23	R 0.23	R 0.27	R 0.27	R 0.29	R 0.29	R 0.33	R 0.33
Wholesale margin	R 0.54	R 0.54	R 0.53	R 0.53	R 0.58	R 0.58	R 0.31	R 0.61	R 0.34	R 0.65
Road accident fund	R 0.72	R 0.72	R 0.80	R 0.80	R 0.88	R 0.88	R 0.96	R 0.96	R 1.04	R 1.04
Retail margin	R 0.81	R -	R 0.92	R -	R 0.99	R -	R 1.39	R -	R 1.51	R -
Fuel levy	R 1.68	R 1.53	R 1.78	R 1.63	R 1.98	R 1.83	R 2.13	R 1.98	R 2.25	R 2.10
Basic fuel price	R 5.23	R 5.66	R 6.56	R 6.87	R 7.85	R 7.89	R 8.63	R 9.04	R 5.36	R 5.55