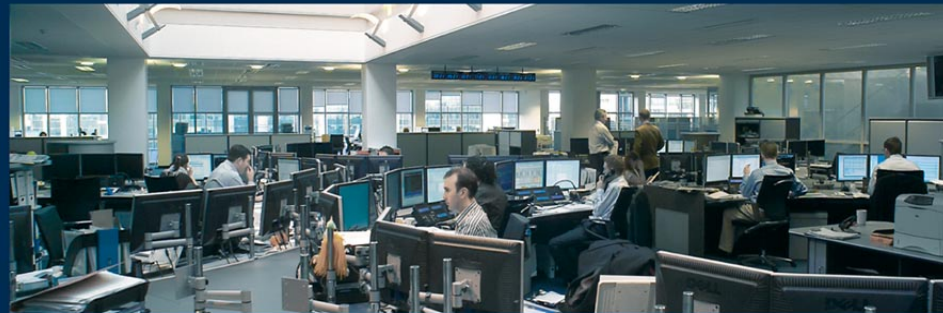


Depfa Bank plc – Infrastructure Finance Unit

Dr. Christian Kummert, Managing Director

European PPP Road Projects from a Lenders Perspective, October 2007

DEPFA BANK plc

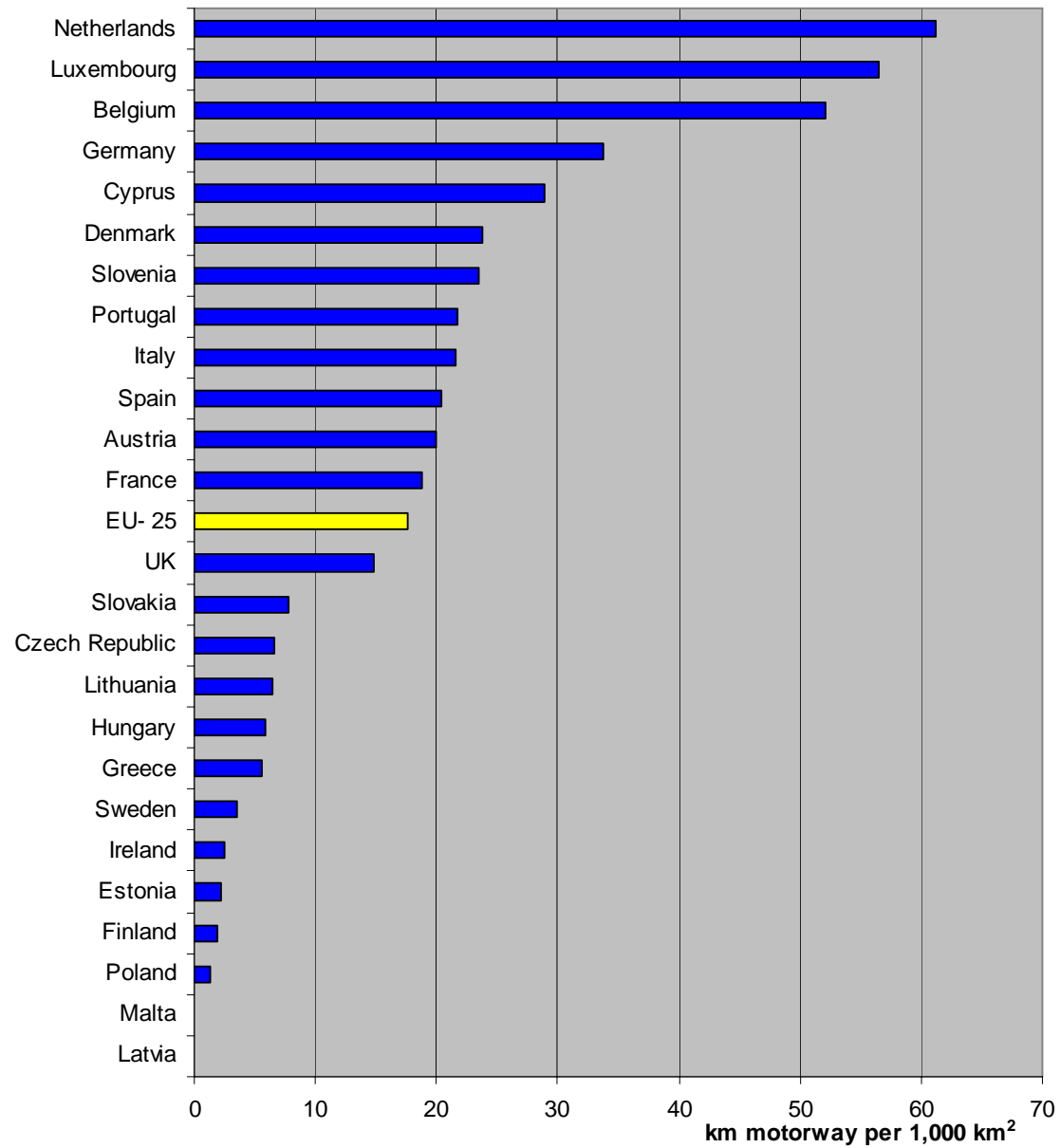


 **DEPFA BANK**

Dublin Amsterdam Chicago Copenhagen Frankfurt Hong Kong London Madrid Milan Mumbai New York Nicosia Paris Rome San Francisco Sao Paulo Tokyo Warsaw

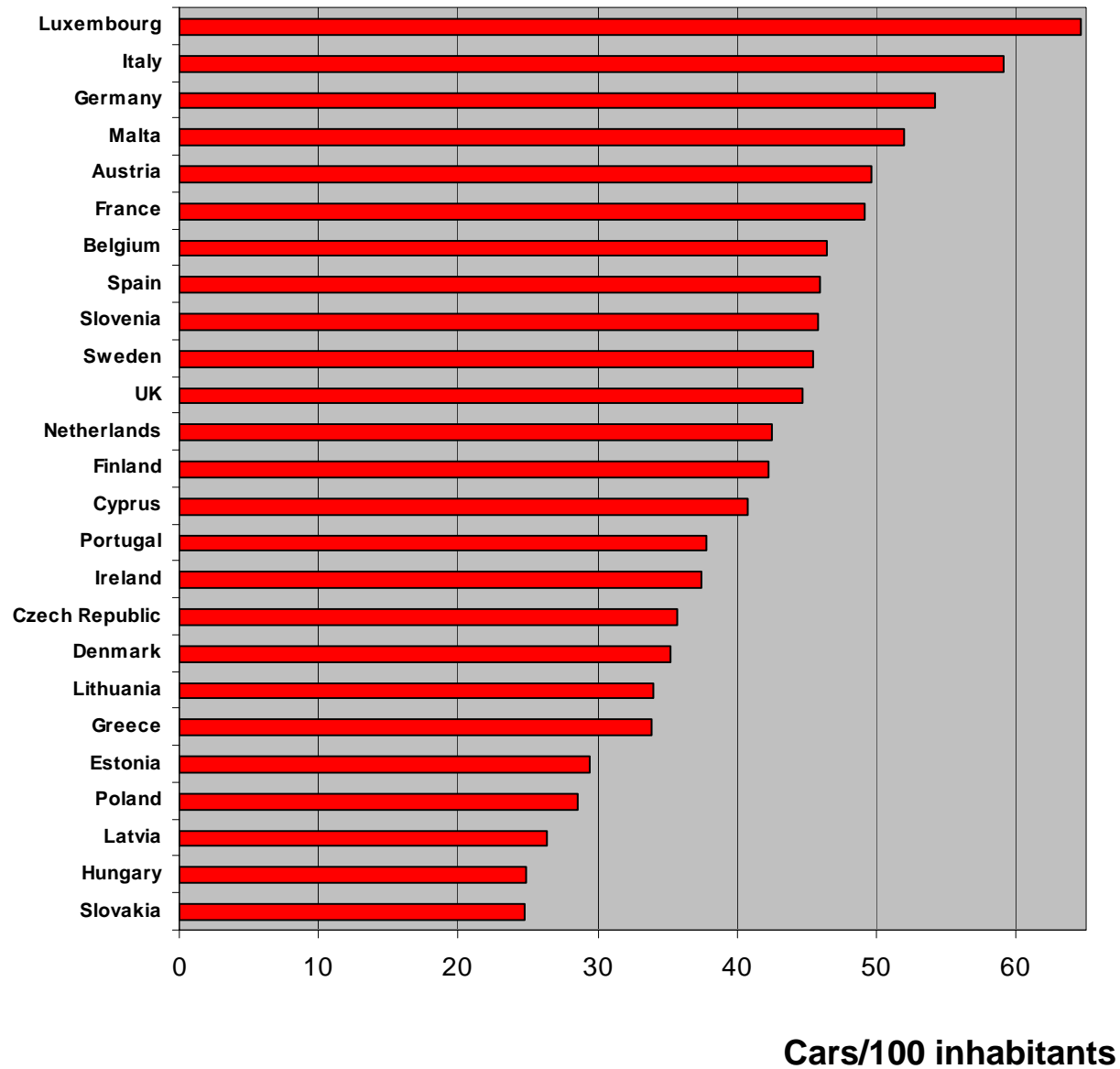
Road PPPs

Motorway Density 2003



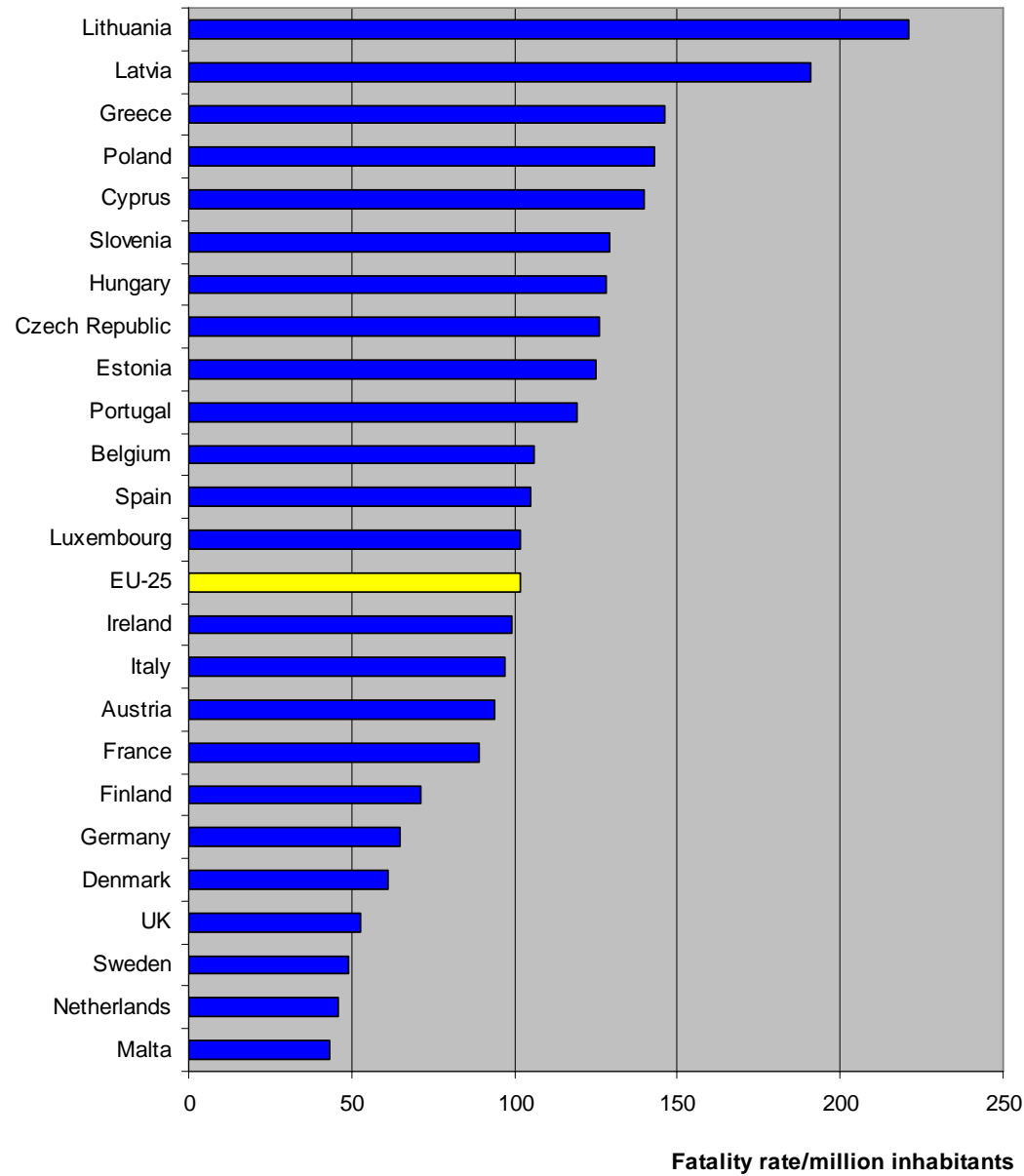
Road PPPs

Car Ownership Levels 2004



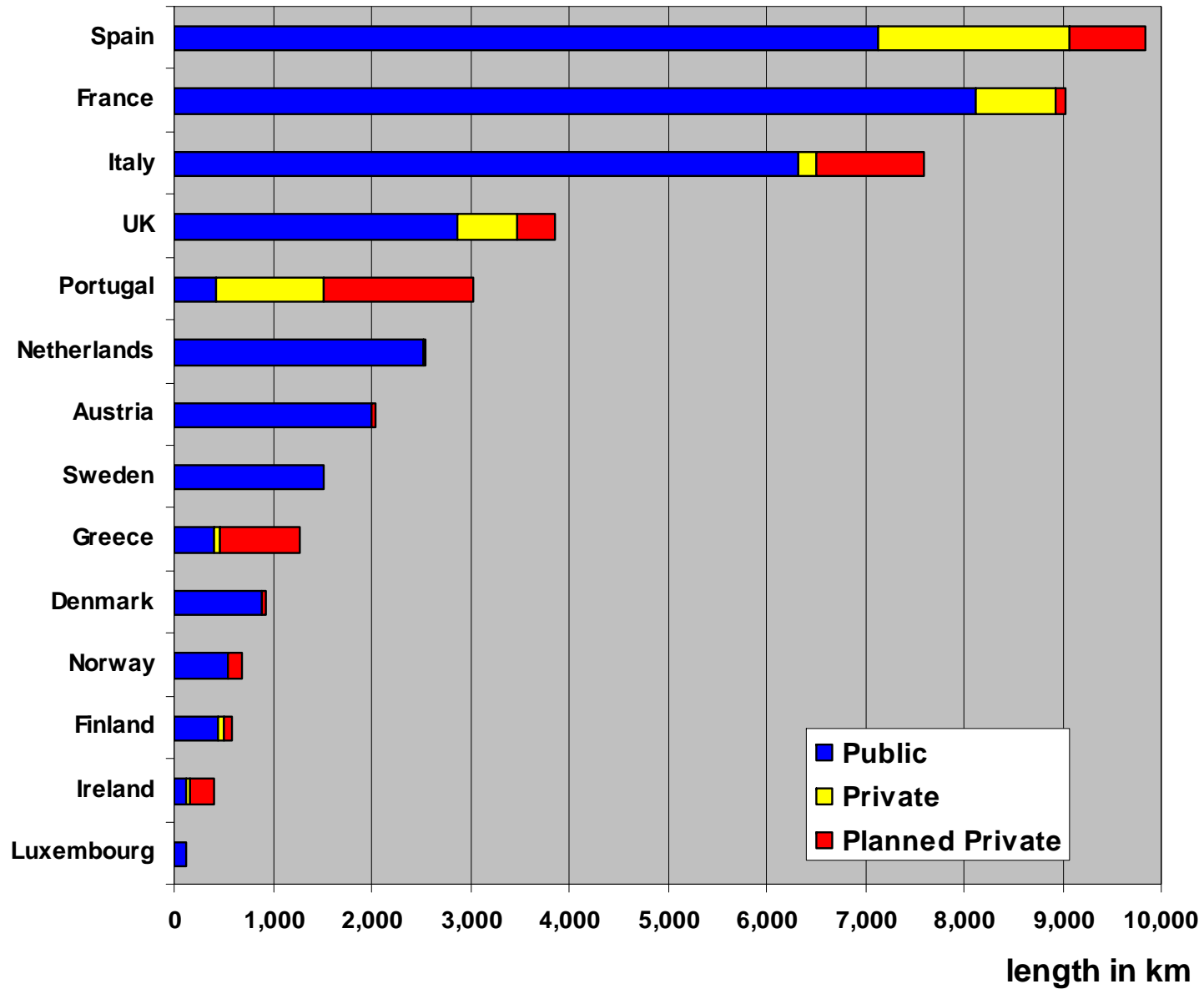
Road PPPs

Fatality Rates 2004



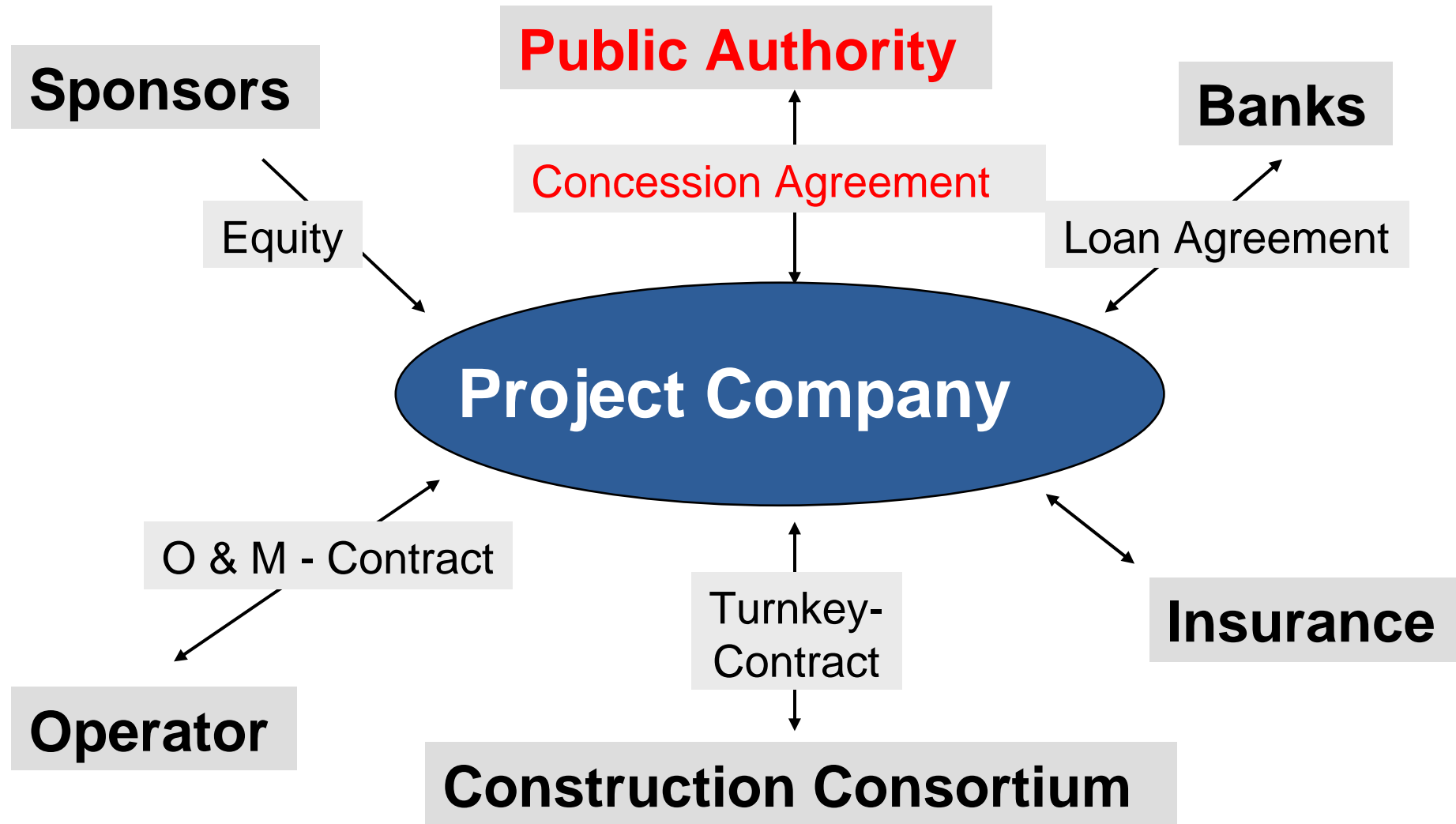
Road PPPs

PPP projects



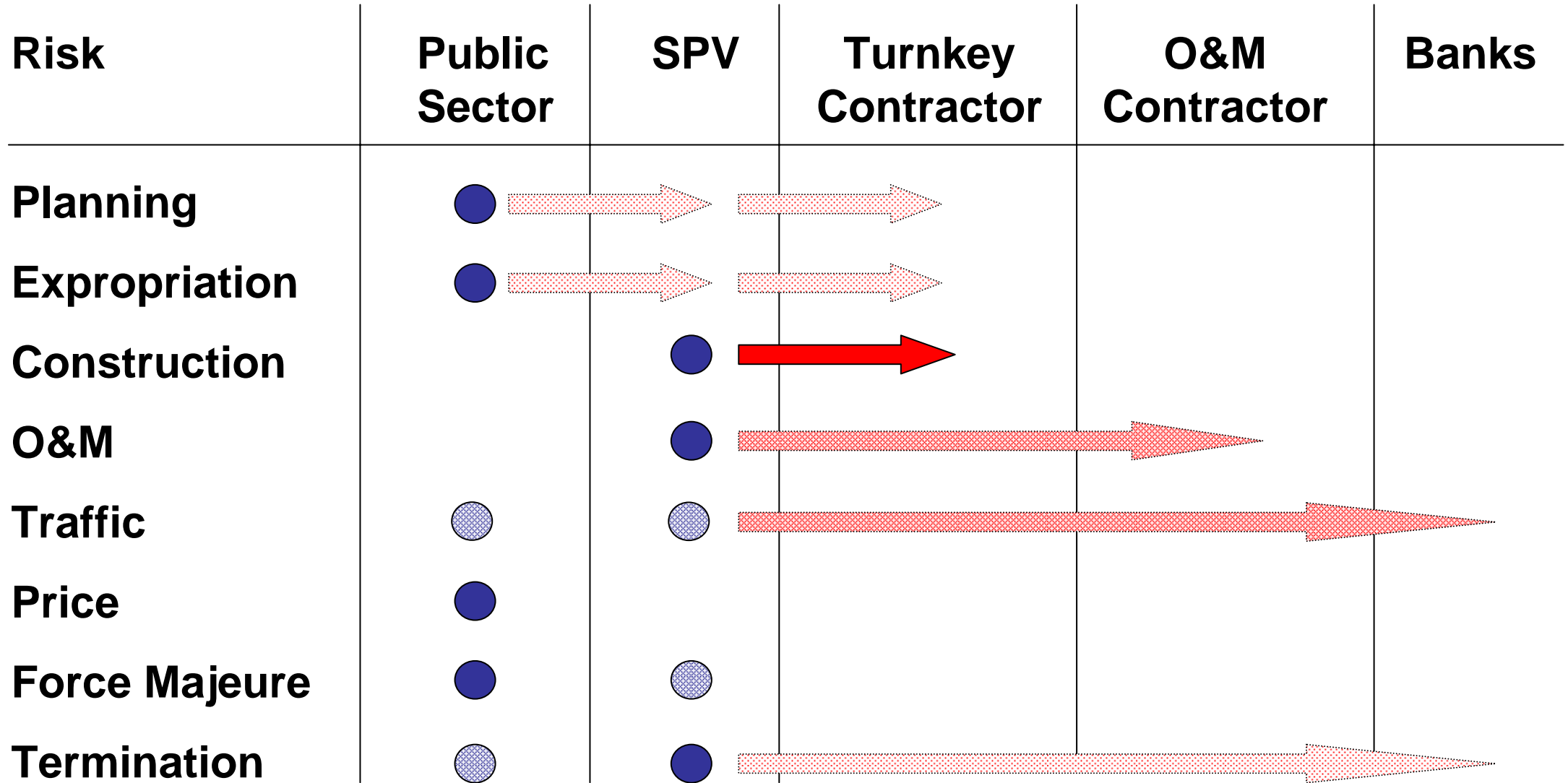
Road PPPs

Contractual Structure



Road PPPs

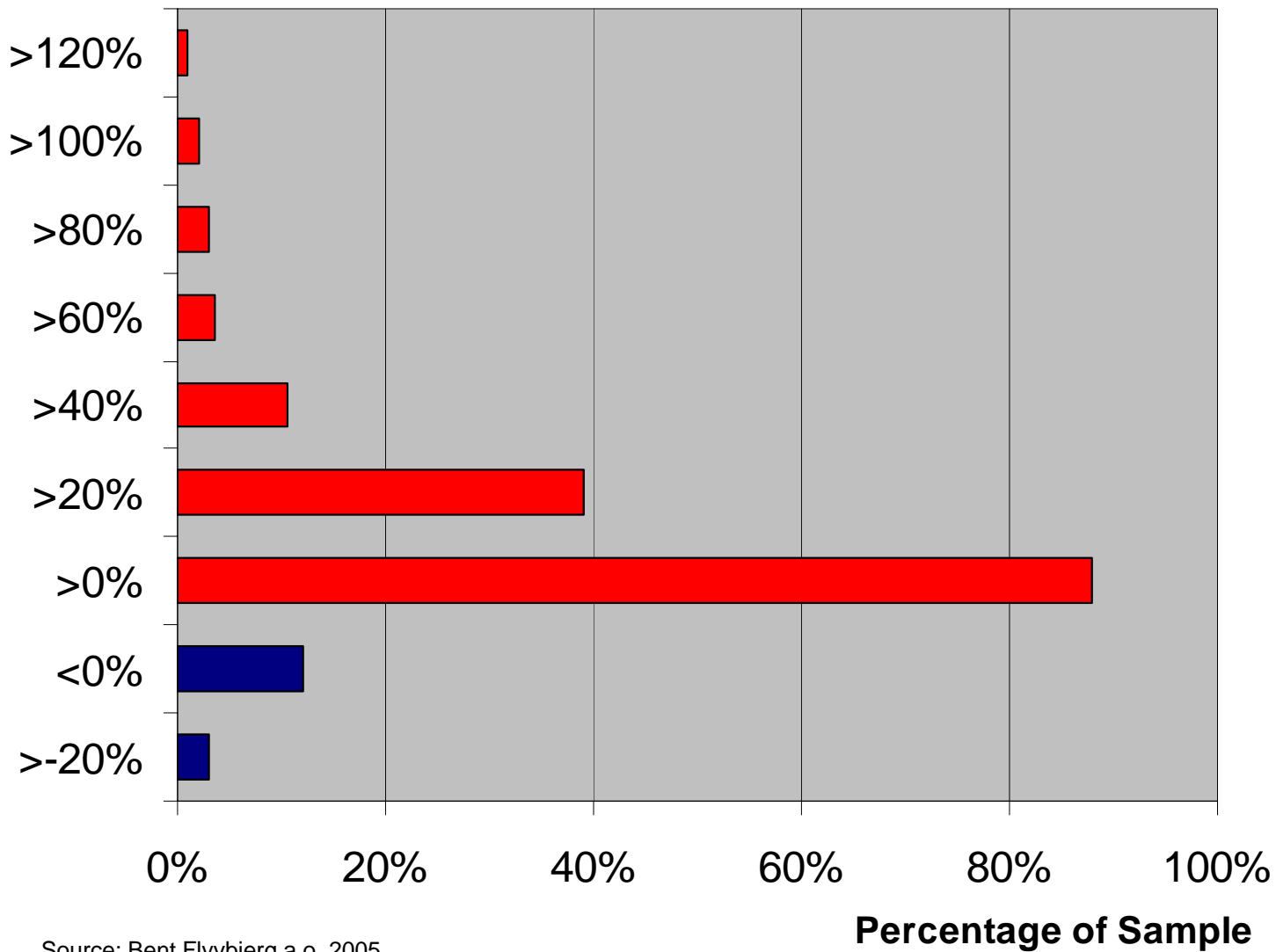
Risk Allocation



Road PPPs

Construction Cost Overrun

Cost Overrun



Source: Bent Flyvbjerg a.o. 2005
Sample size: 167 projects

- **Experience Contractors**
- **Buffer in construction schedule (working shifts, winter break, etc.)**
- **Completion buffer (Construction Contract versus Concession Agreement)**
- **Joint and several liability of turnkey contractors**
- **Completion guarantee by contractors/sponsors**
- **Liability caps of contractor**
- **Liquidated Damages for delays in completion**
- **Advance Payment Bond, Retention, Performance Bond**
- **Warranty periods**
- **Direct Agreement with Turnkey Consortium**

August 2005: Sample of 104 road transactions

Traffic on individual transactions were between 15% and 150% of forecast during the first year of operation

	below forecast	standard deviation
Year 1	23%	26%
Year 2	22%	23%
Year 3	21%	22%
Year 4	20%	24%
Year 5	21%	25%

Over-estimation of revenues due to

- Traffic Volumes
- Value of time
- Ramp up
- Vehicle structure
- Growth rates
- Toll indexation to inflation
- Fare evasion

Market

- Independent Audit of Traffic Study, based on conservative assumptions
- Financial Model showing acceptable coverage ratios
- Sufficient “Concession tail”
- Toll indexation
- Payment mechanism (i.e. toll, shadow toll, availability payment)

Performance

- Pass through of operating risks to O&M contractor
- Reliable O&M cost predictions
- Major maintenance costs and intervals
- Hand back requirements

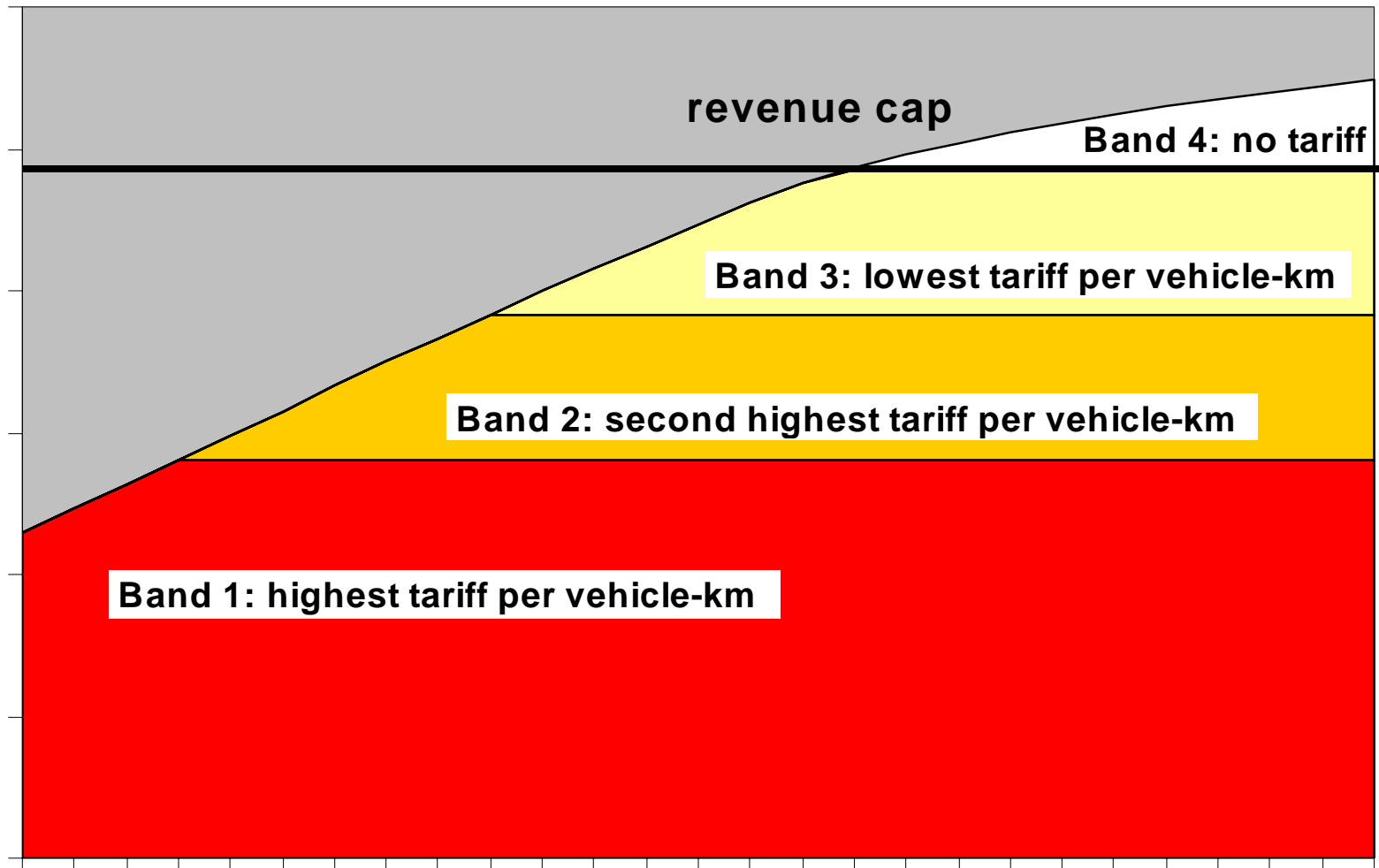
Road PPPs

Payment Schemes

	Full Toll	Shadow Toll	Availability Payment
Toll Payment	by User	by Government	by Government
Traffic Risk	traffic flow less predictable	traffic flow more predictable	no traffic risk
Performance Risk	no additional penalties	penalties possible	sophisticated deduction schemes
Public Sector	<ul style="list-style-type: none">- no exposure- low acceptance	<ul style="list-style-type: none">- financial exposure- optimal use	<ul style="list-style-type: none">- financial exposure- optimal use- strong control
Application	<ul style="list-style-type: none">- few intersections- high traffic	<ul style="list-style-type: none">- many intersections- low traffic	<ul style="list-style-type: none">- many intersections- political motivation

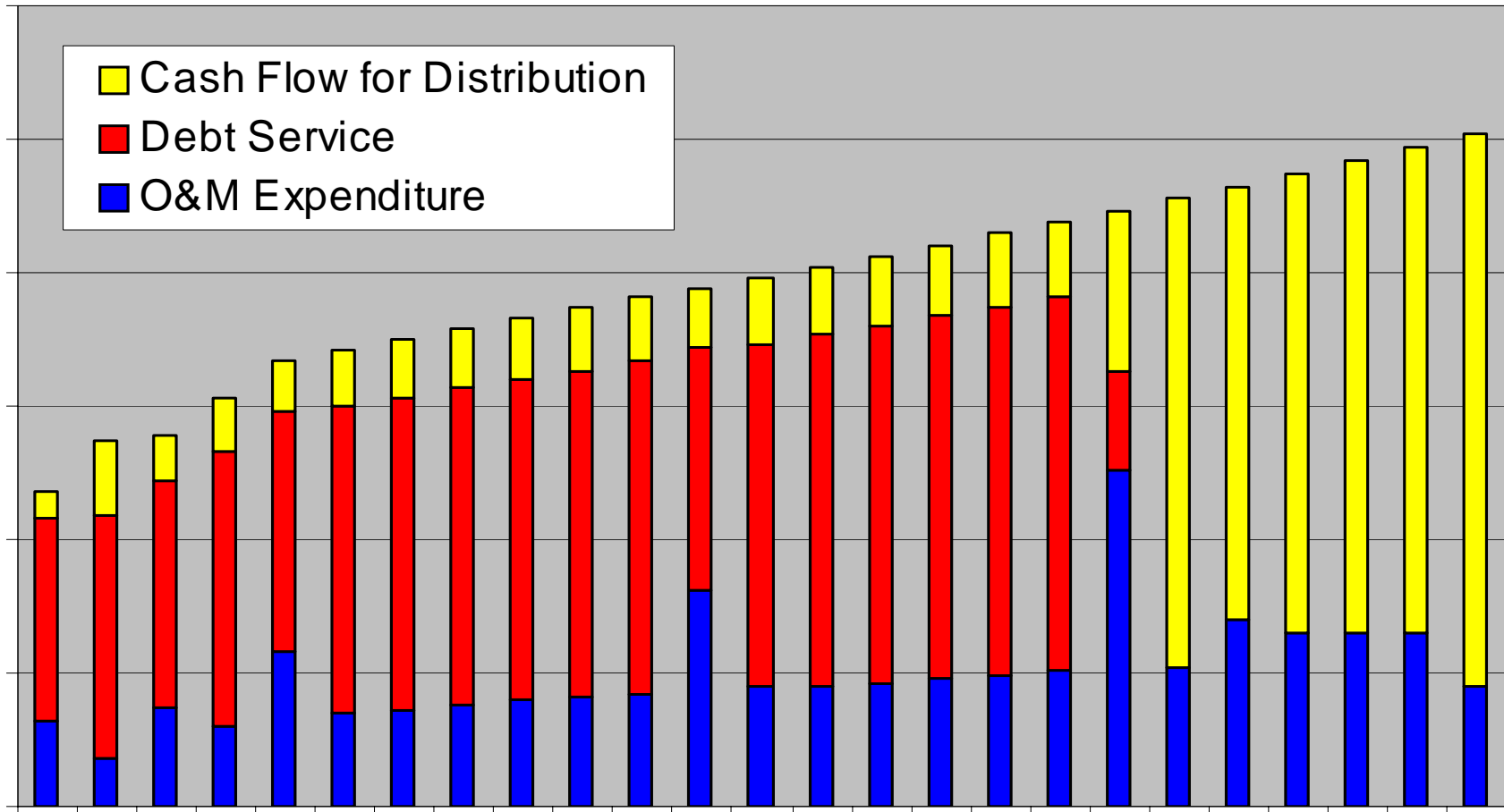
Road PPPs

Banding Structure



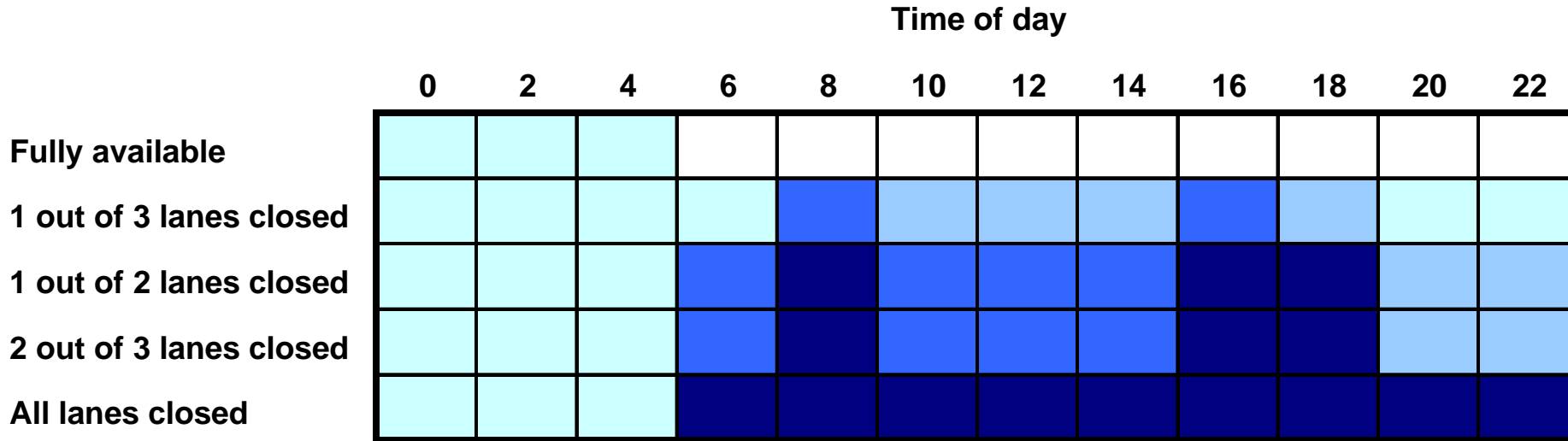
Road PPPs

Cash Flow Profile of Shadow Toll Road

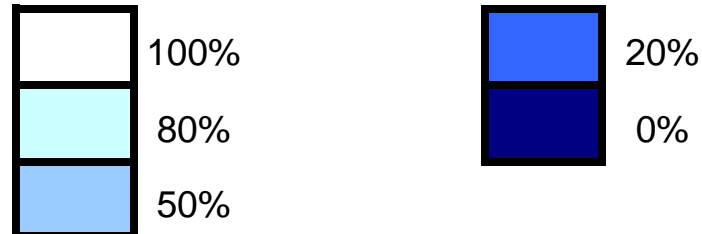


Road PPPs

Availability Payment Structure A13/UK



Availability Payment Due (in %)



Under-estimation of Traffic

- Especially when revenue caps are in place
- O&M costs in line with traffic
- Higher portion of heavy vehicles
- Major maintenance costs
- Major maintenance intervals
- Road widening

- Annual Debt Service Coverage Ratios (ADSCR)
- Loan Life Coverage Ratios (LLCR)
- Project Life Coverage Ratios (PLCR)
- Debt/Equity Ratios
- Concession Tail
- Sensitivities (in particular break even scenarios)
- Repayment Profile (annuity, sculpted, ballon, bullet, cash sweep)
- Reserve Accounts (Debt Service Reserve Account, Major Maintenance Reserve Account)

- Austria: ASFINAG as a state owned company grants road concessions to private sector
- Norway: Availability payment based road concessions, Govt. receives toll income
- Germany: Motorway concessions with toll income from heavy vehicles where toll revenues are collected and controlled by Tollcollect
- Italy: General Contractor Scheme with a purchase of receivables structure covering part of the construction costs
- Portugal: Application of toll and shadow toll road schemes depending on, inter alia, economic strength of respective region

Road PPPs

Risk Reward Balance

maturity (years)

