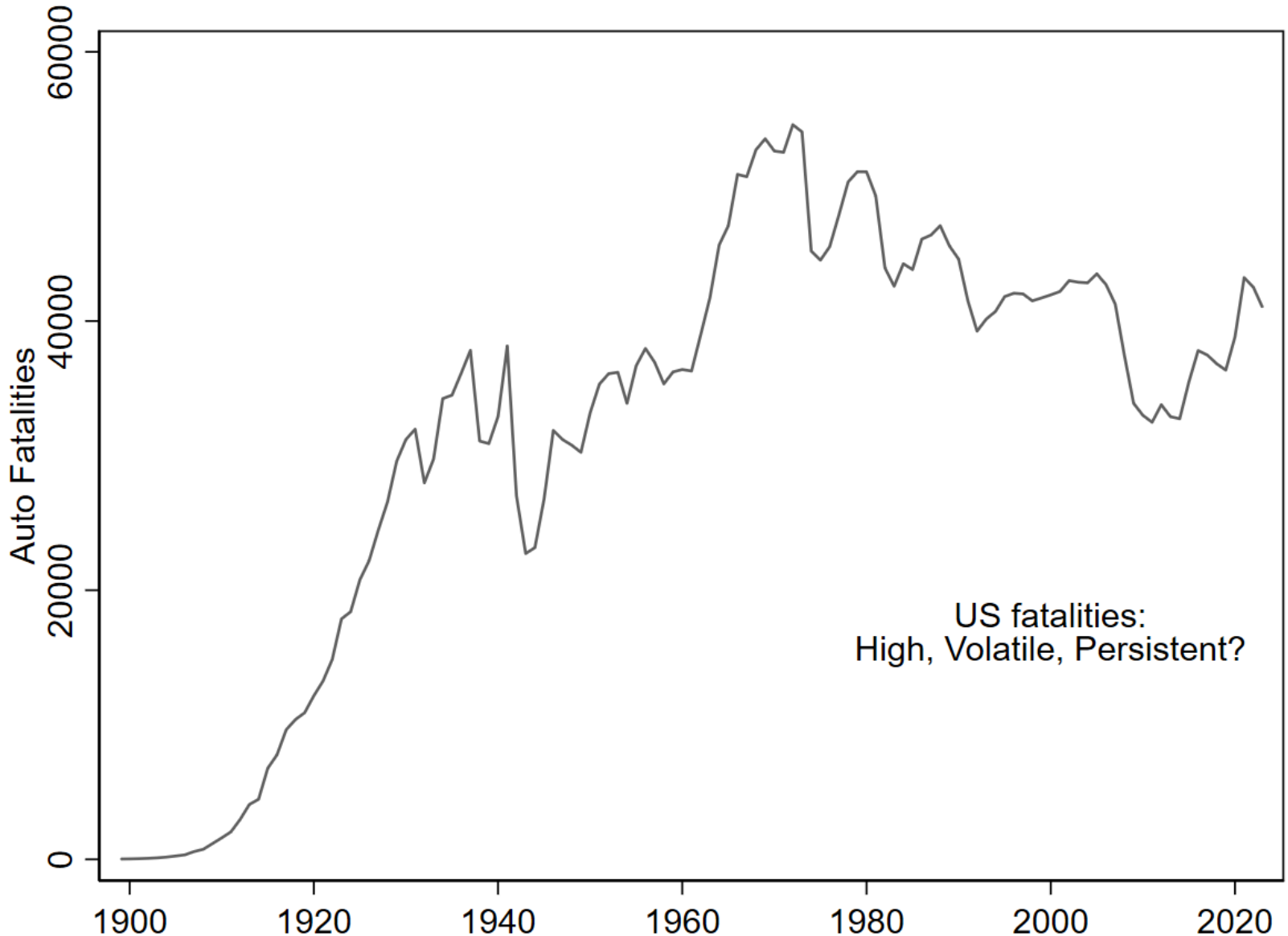
Assessing US Automobile Safety From an International Perspective:

American Exceptionalism Revisited

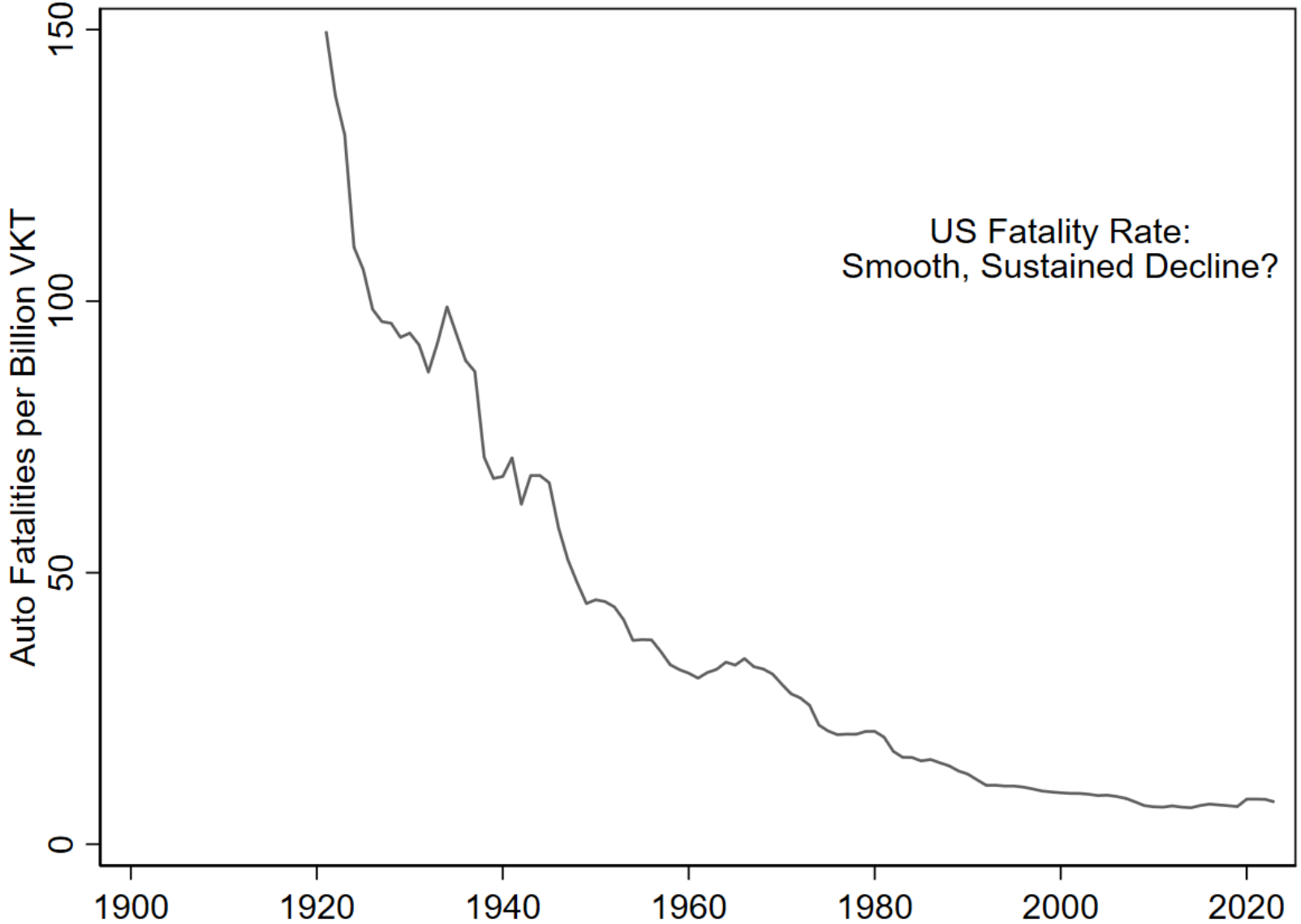
Vikram Maheshri & Clifford Winston

May 11, 2026

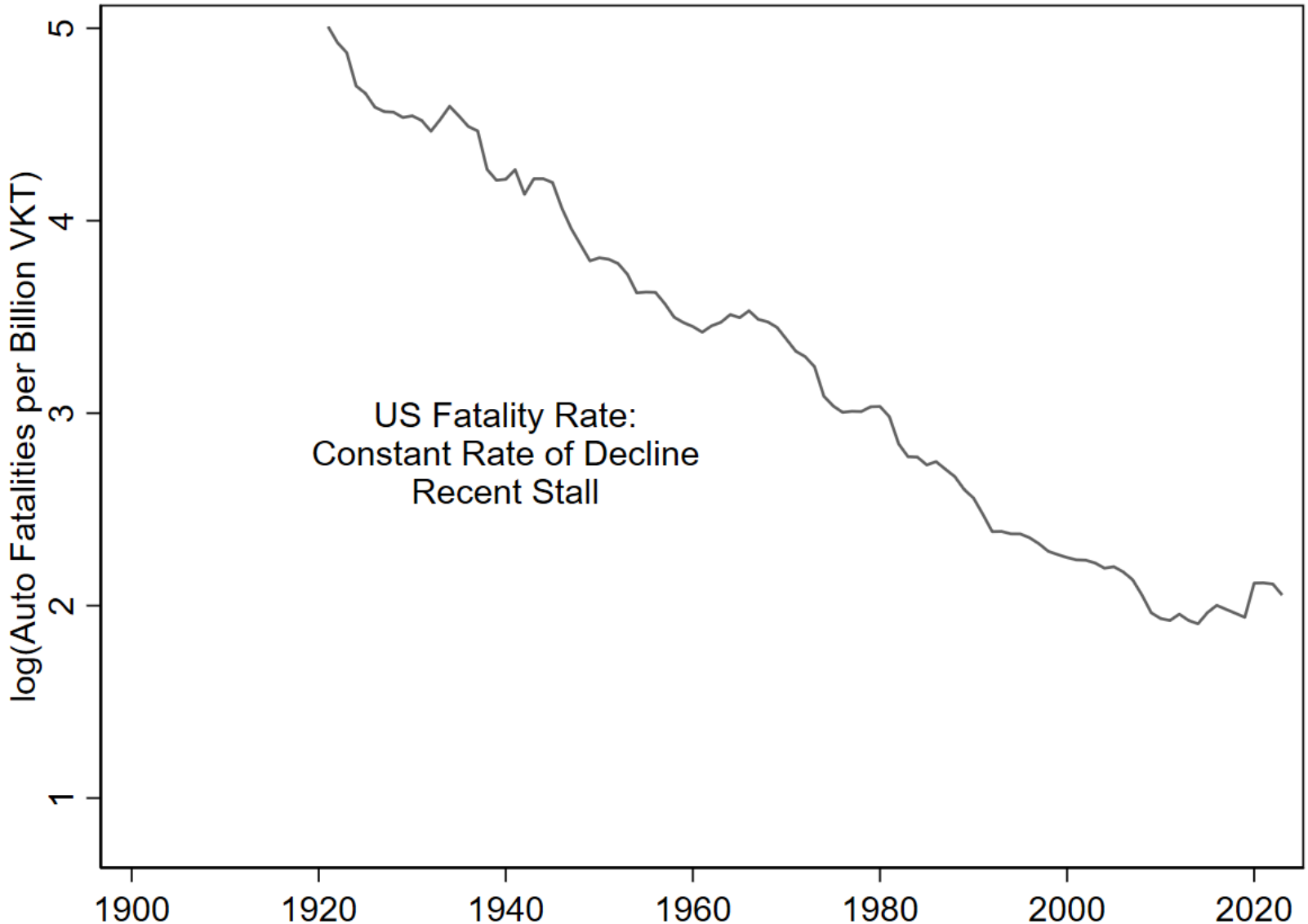
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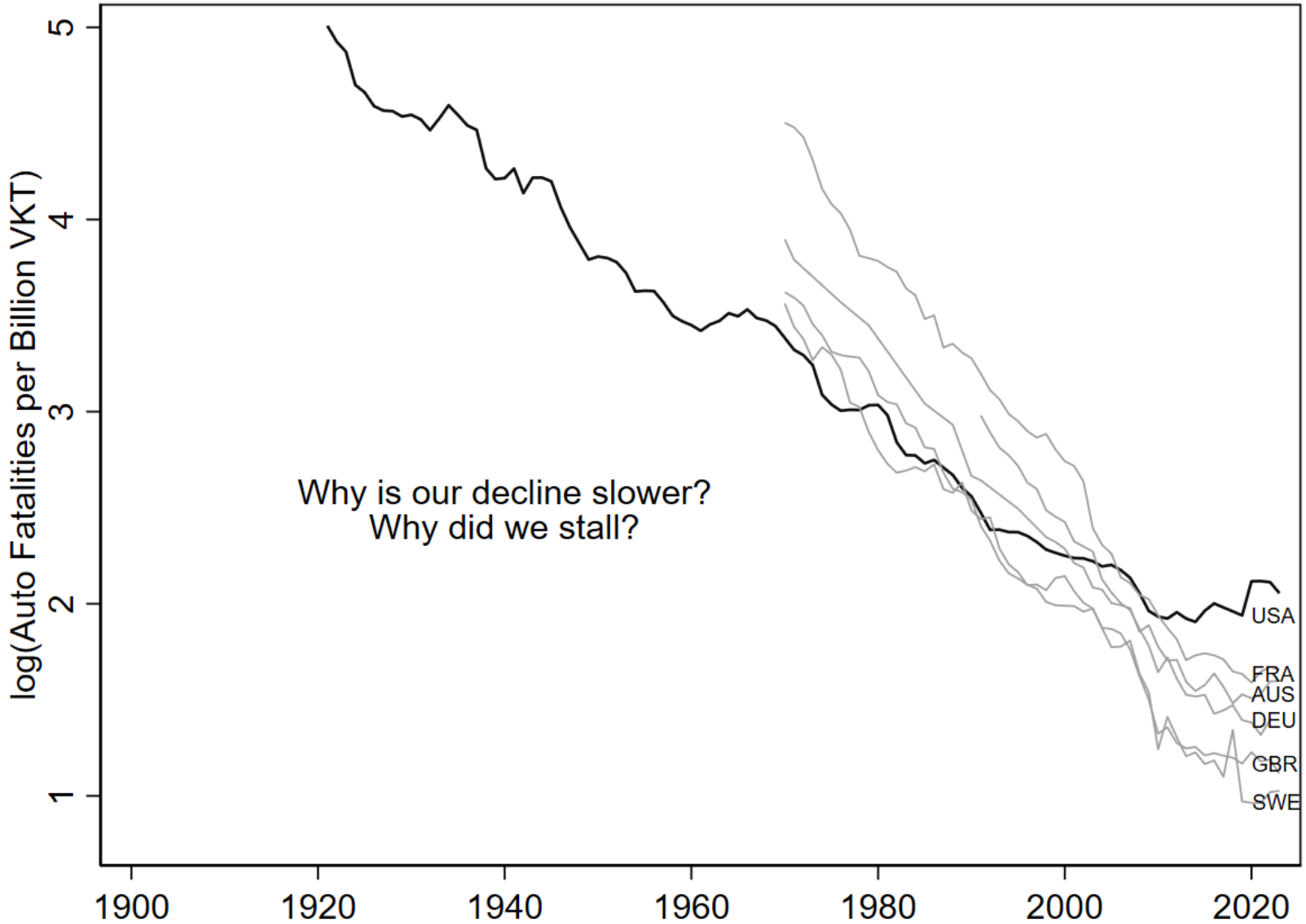
You've Probably Seen This Too



You May Have Seen This



You May Not Have Seen This



This Paper

- Is the US an outlier when it comes to auto safety?
- Limited causal knowledge of the determinants of accidents (Maheshri and Winston (2026))
  - Controlled environments (External validity? Behavior?)
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  - Aggregate Data (Limited applications)
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This Paper: The Big Idea

- Auto safety is determined in an equilibrium that is shaped by two forces:
  - A *mobility* response to greater safety – like a demand elasticity.
  - An *intensity* response to greater potential safety – risk offsetting a la Peltzman (1975).
- Variation across countries has its roots in these two forces.
  - Similar technologies available to rich countries, so differences reflect preferences for safety, mobility and intensity.
- US has always had a high mobility response. The Peltzman effect has intensified in many countries but is greater in the US.

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Why a Bigger Peltzman Effect?

- US motorists have stronger preferences for larger vehicles.
  - Safety protection of size is offset by congestion, which increases exposure to accidents (Winston and Yan (2021).
- In most peer countries, higher fuel taxes and displacement-based registration fees make upsizing prohibitive. Drivers rely on active safety systems (ABS, ESC) that empirically show lower total offset than the passive protection of mass.
- Higher speeds (geography?) and DUI (weaker laws) are more prevalent in the US.
- US is less aggressive than other countries in using regulation to reduce risk (eg., SUV and light truck loophole in CAFE)

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Policy Implications

- Zero tolerance policies for auto fatalities (eg Vision Zero) are inefficient, despite global popularity.
  - Boston launched in 2015.
  - Washington, DC announced in 2015, goal of 2024.
  - Houston announced in 2019, goal of 2030. Scaled back in 2024.
- US has not had any clear, major successess since MADD in the 1980s.
- Individuals and societies trade-off safety, mobility and intensity differently.
  - Variation in historical data suggests we are not all at corners.
  - Hard to identify policies that can broadly reduce accidents.
- As autonomous vehicles take center stage, the Peltzman effect will diminish.
  - We speculate some convergence between the US and peer countries.

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Data

- Aggregate Fatalities
  - Well measured by vital statistics and national crash monitoring systems.
  - Harmonized fatality counts from the OECD/International Transport Forum Road Safety Database
- Aggregate Driving (VKT)
  - Much harder to measure.
  - Different methodologies (odometer sampling, traffic count modeling, fuel consumption)
  - We combine data from OECD/ITF with data from national transport ministries.
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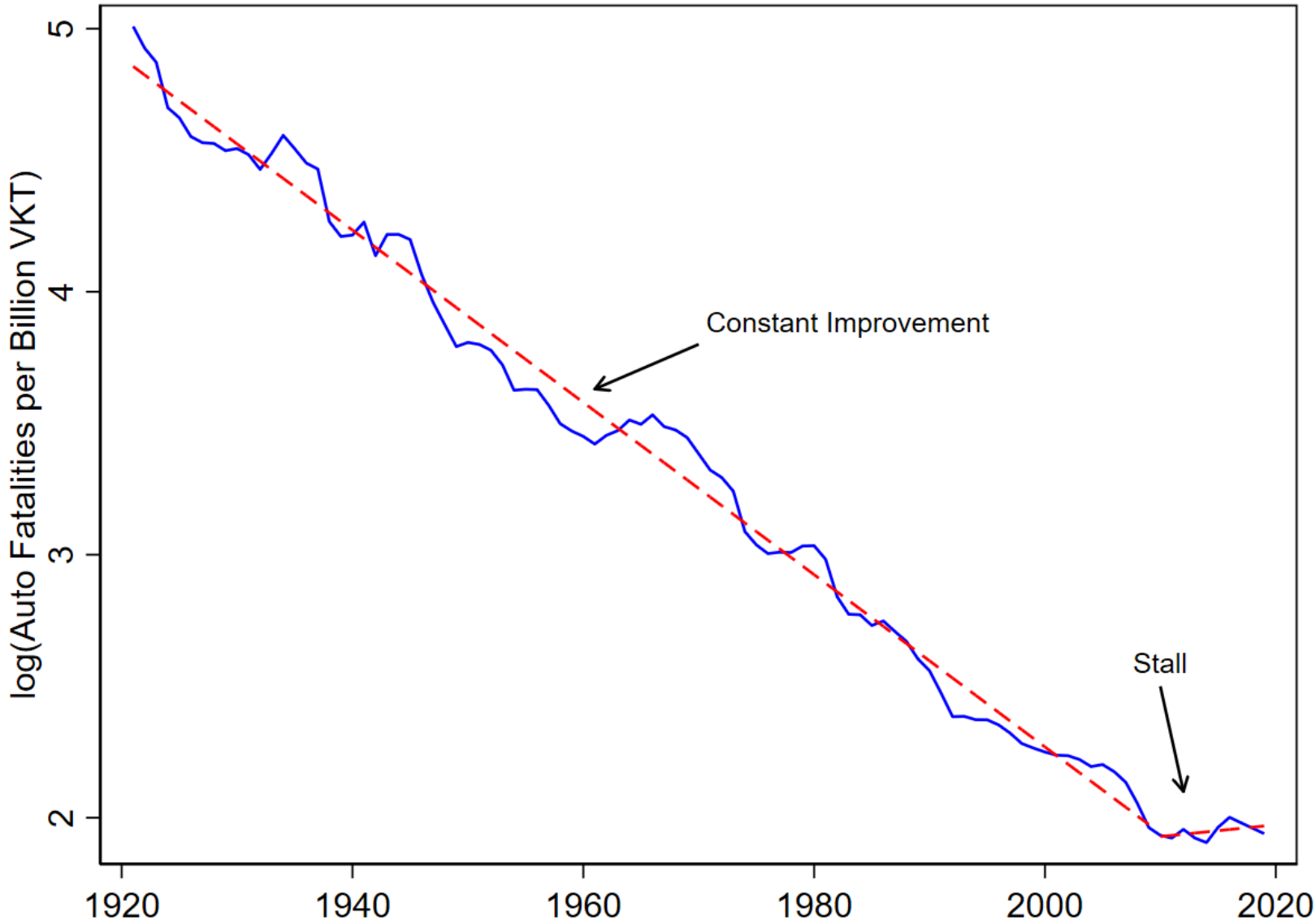
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Fitting log(US Auto Fatalities per VKT)



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Country	$\hat{\beta}^1$	$\hat{\beta}^2$	Kink Year	R^2	Sample
Poland	-0.217	-0.067	2011	0.980	2008–2019
S. Korea	-0.115	-0.067	2009	0.926	2000–2019
Austria	-0.066	-0.033	2013	0.995	1970–2019
Germany	-0.064	-0.031	2010	0.996	1991–2019
Israel	-0.061	-0.053	2015	0.980	1970–2019
Slovenia	-0.060	-0.099	2005	0.974	1970–2019
Japan	-0.059	-0.043	2005	0.956	1965–2019
France	-0.058	-0.043	2005	0.995	1970–2019
Netherlands	-0.058	0.026	2013	0.988	1972–2019
Switzerland	-0.055	-0.061	2013	0.995	1965–2019
Belgium	-0.054	-0.126	2011	0.993	1985–2017
Great Britain	-0.053	-0.018	2010	0.992	1965–2019
Australia	-0.052	-0.025	2015	0.995	1970–2019
Finland	-0.050	-0.039	2015	0.981	1975–2019
Norway	-0.050	-0.073	2011	0.980	1973–2019
Denmark	-0.049	-0.027	2011	0.987	1965–2019
Sweden	-0.047	-0.025	2010	0.985	1965–2019
Iceland	-0.046	-0.032	2007	0.813	1980–2019
New Zealand	-0.039	0.013	2011	0.939	2000–2019
United States	-0.033	0.004	2010	0.992	1921–2019
Czechia	-0.022	-0.057	2005	0.971	1980–2019
Canada	-0.013	-0.044	2008	0.988	2000–2019

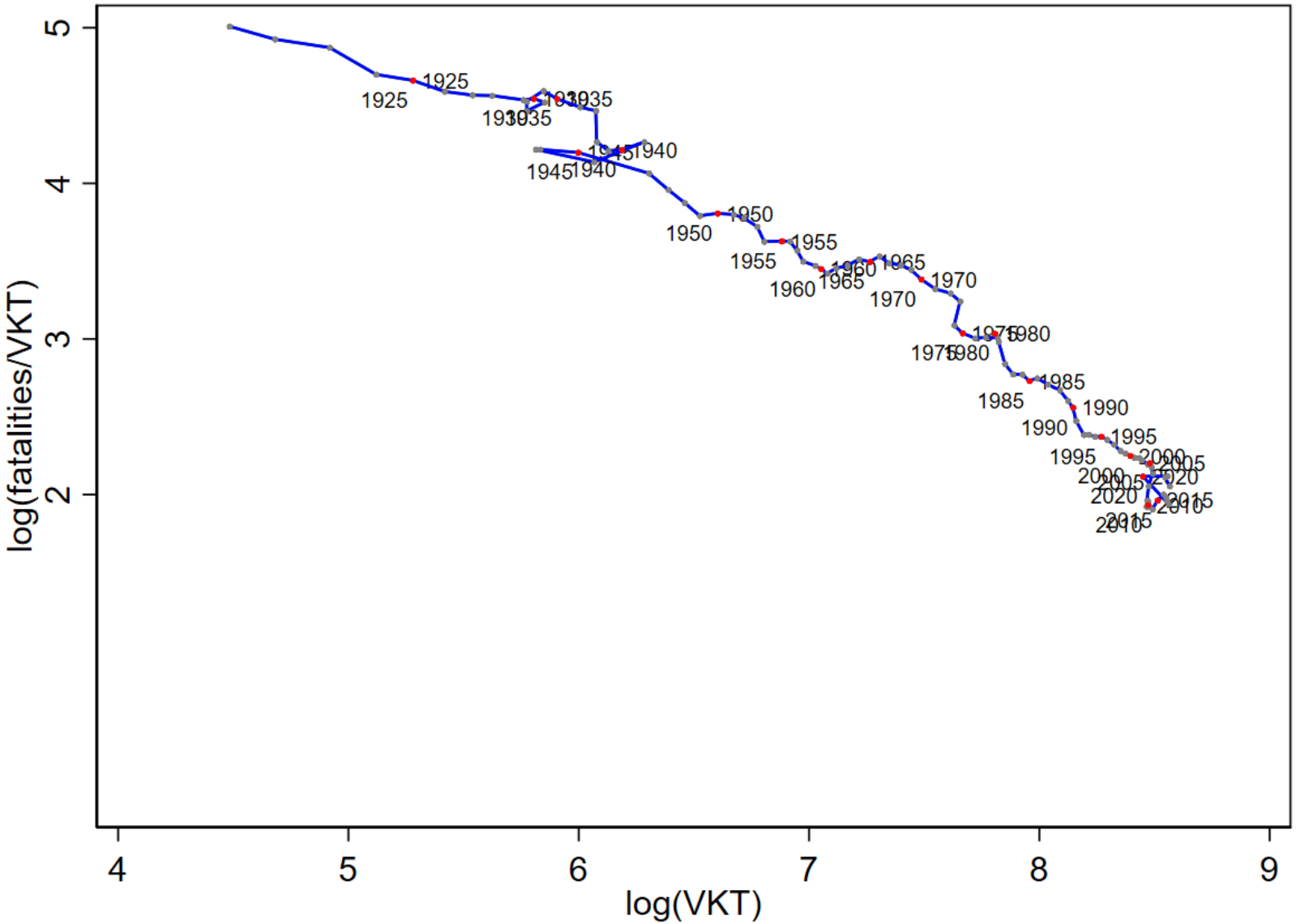
- Piecewise linear fits extremely well.
- US has very slow progress both pre- and post-kink.

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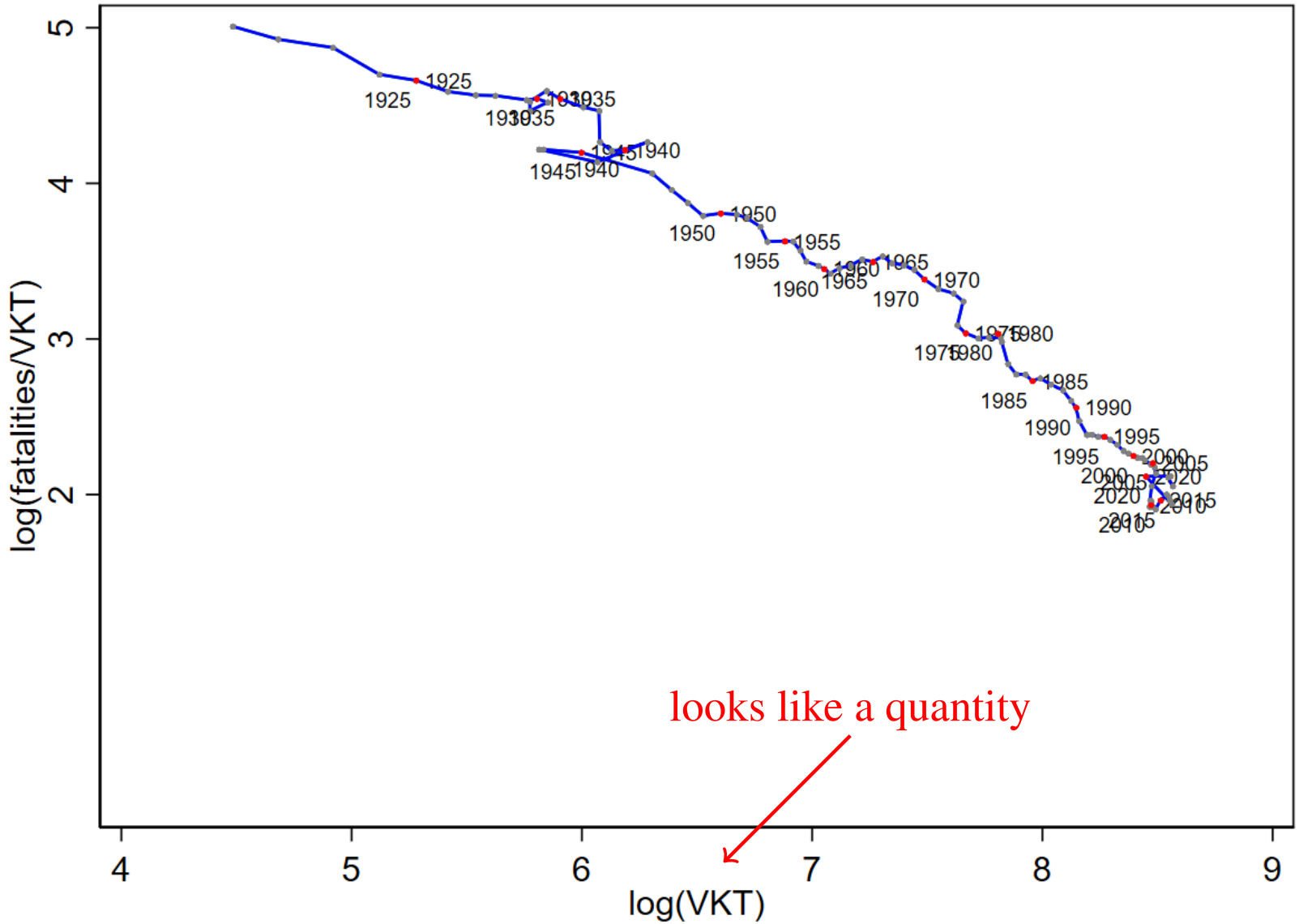
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New Zealand	-0.039	0.013	2011	0.939	2000–2019
United States	-0.033	0.004	2010	0.992	1921–2019
Czechia	-0.022	-0.057	2005	0.971	1980–2019
Canada	-0.013	-0.044	2008	0.988	2000–2019

- Piecewise linear fits extremely well.
- US has very slow progress both pre- and post-kink.

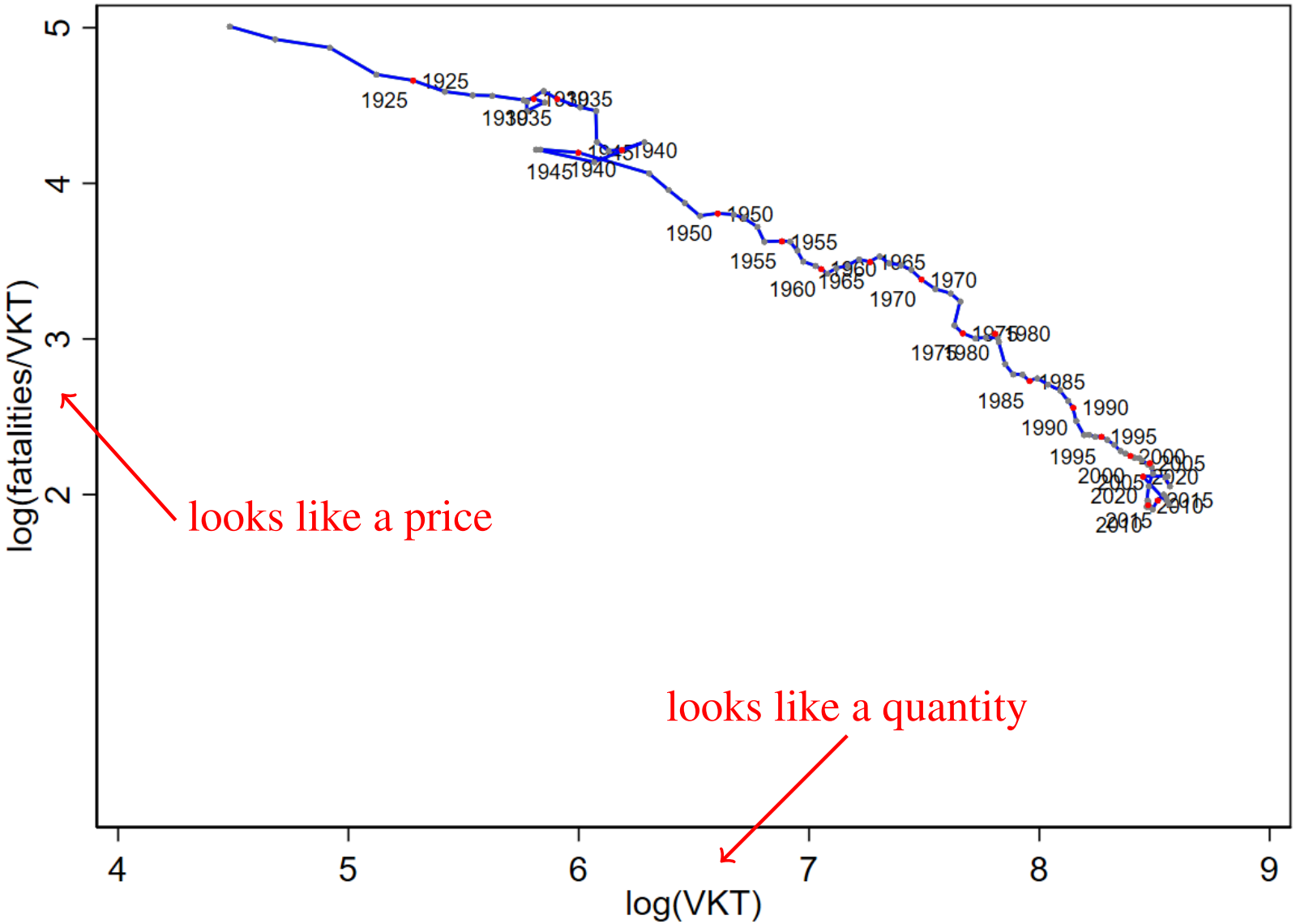
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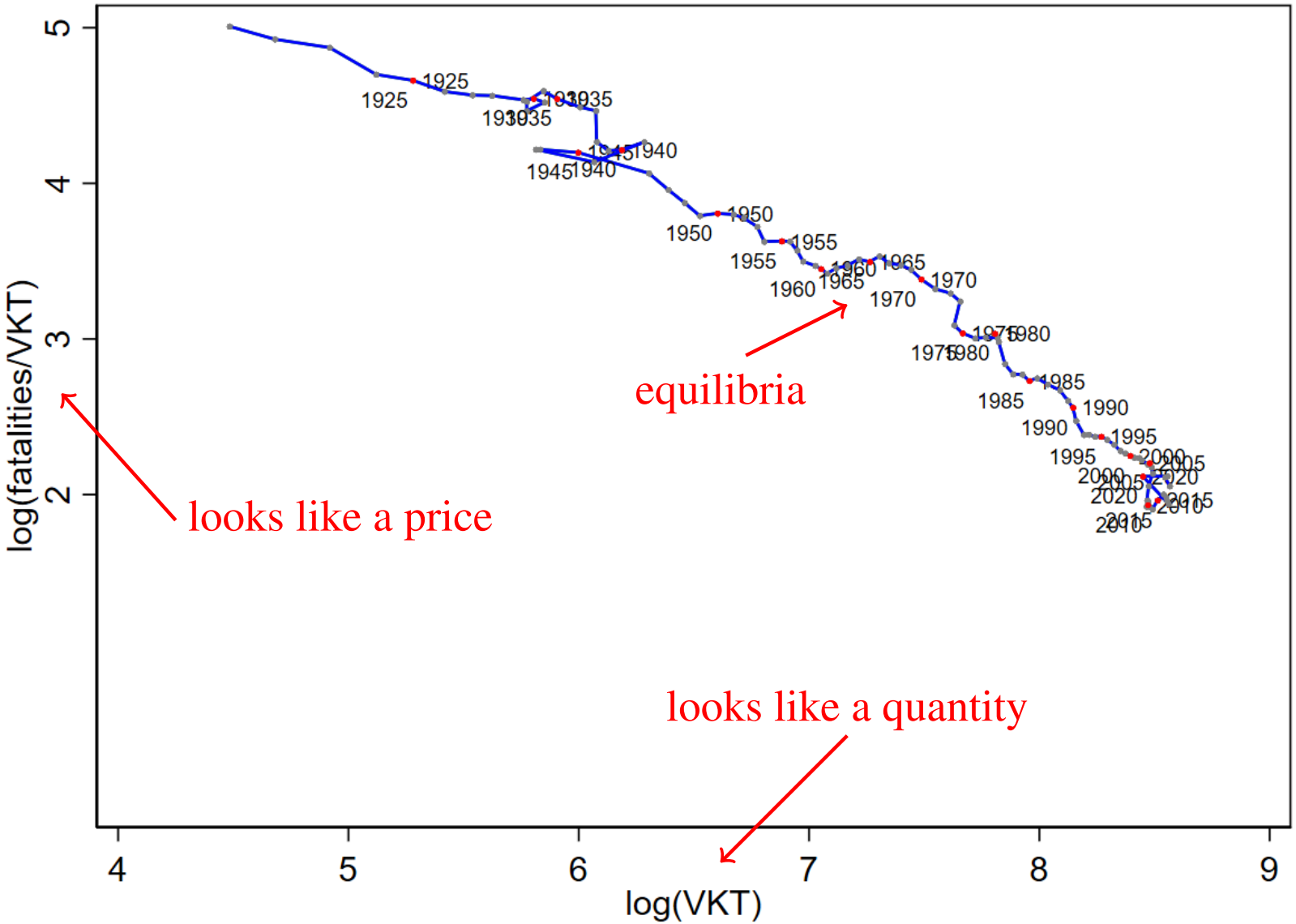
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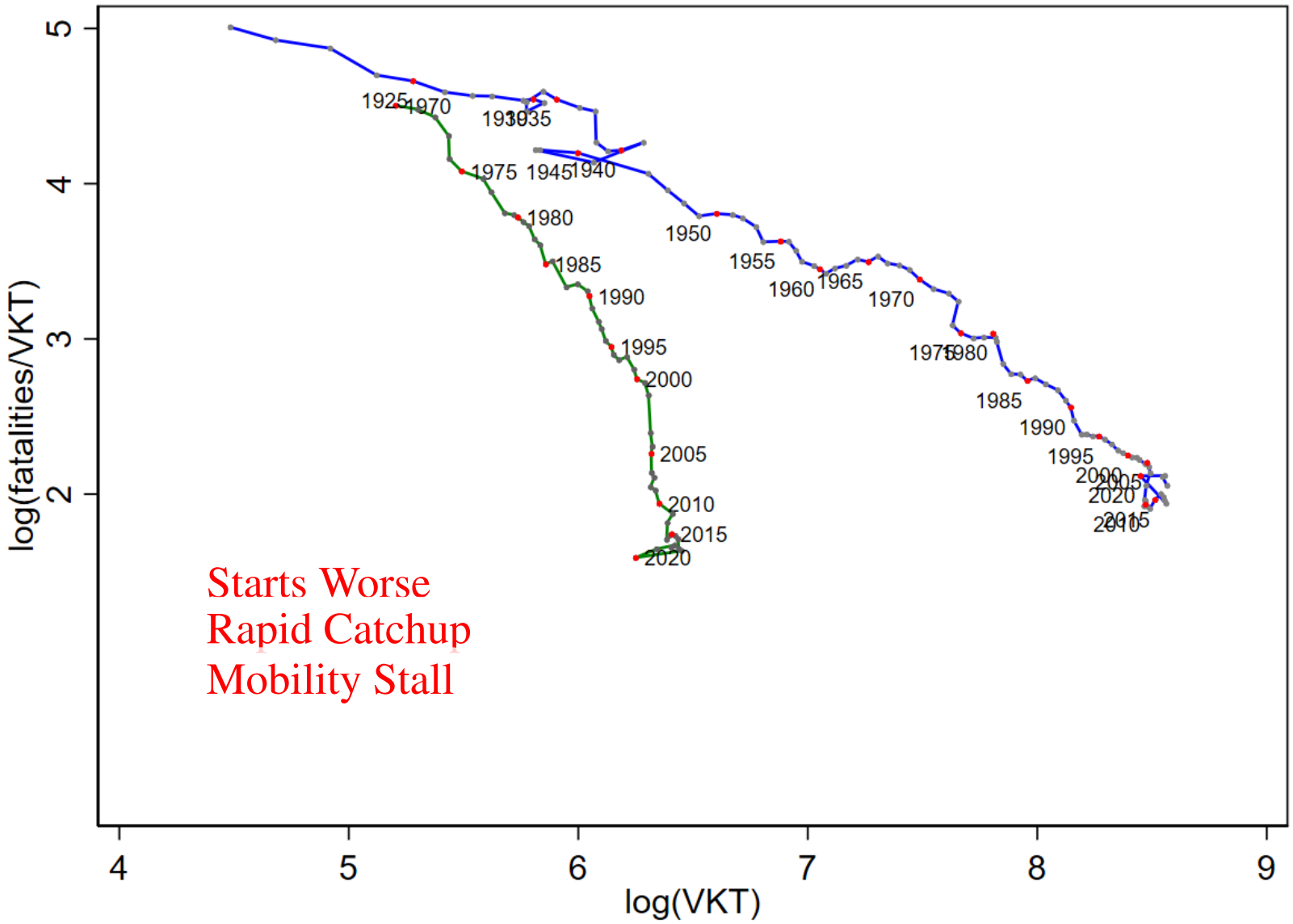
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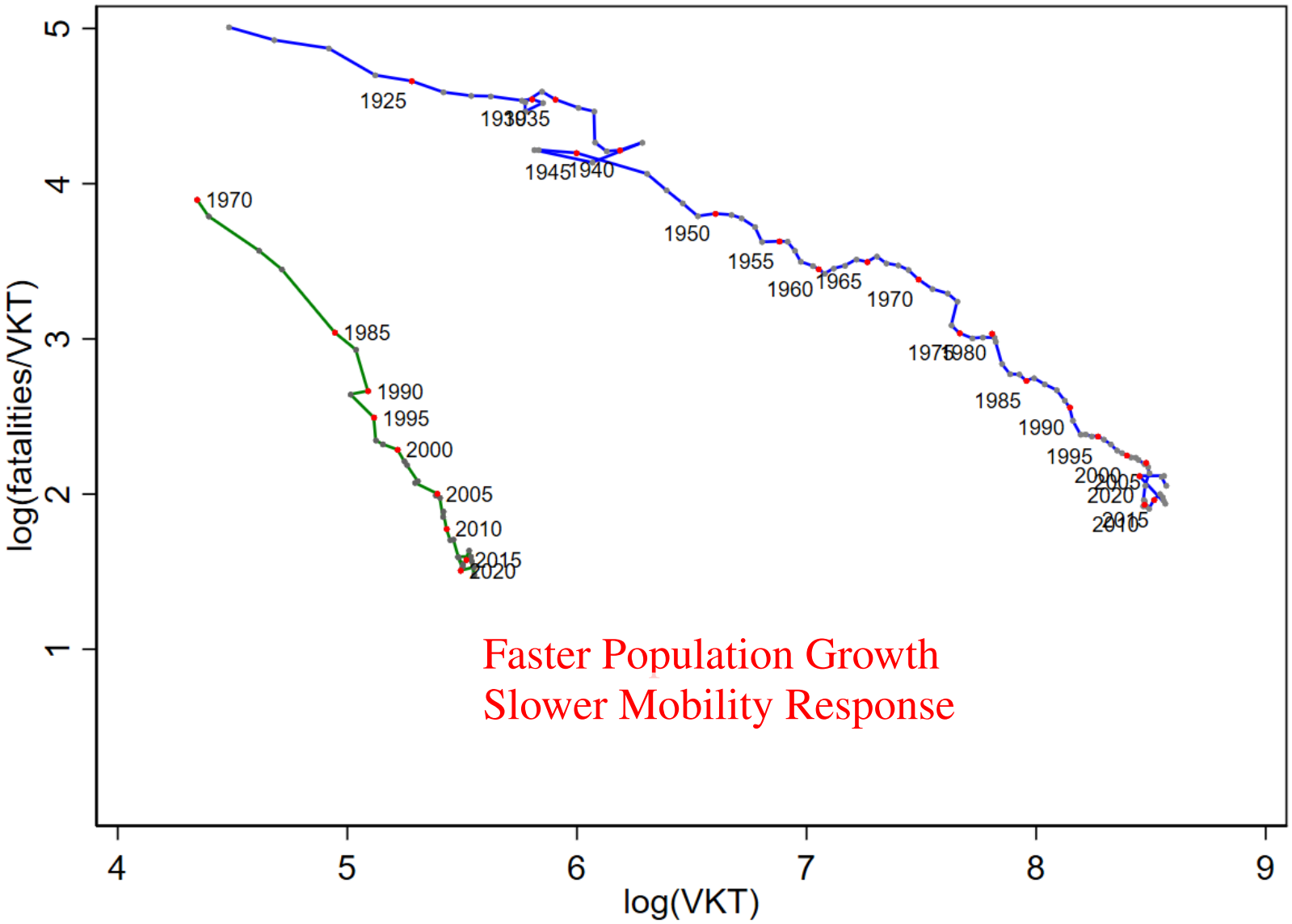
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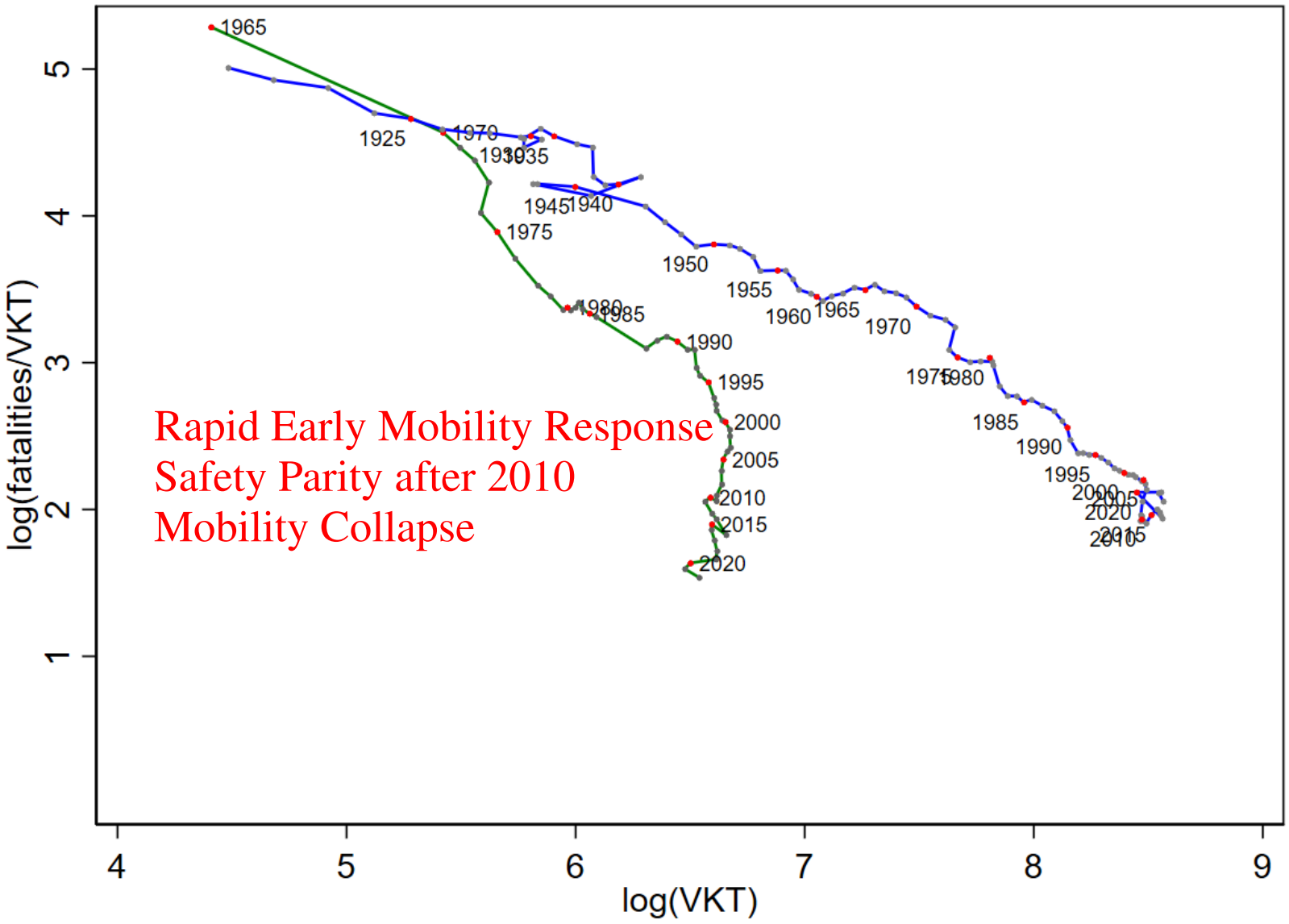
France and the US



Australia and the US



Japan and the US



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  - Need a model

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- ε captures how safety $\rightarrow$ mobility.

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- The supply of safety is ultimately determined by the level of safety capital.

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- This is a fundamental supply-side primitive. For a given level of investment, it determines how much P is supplied.

A Fresh Look at the Data

- For each country, we have two trajectory slopes:

$$m_1 = \frac{\partial \log P}{\partial t} \tag{2}$$

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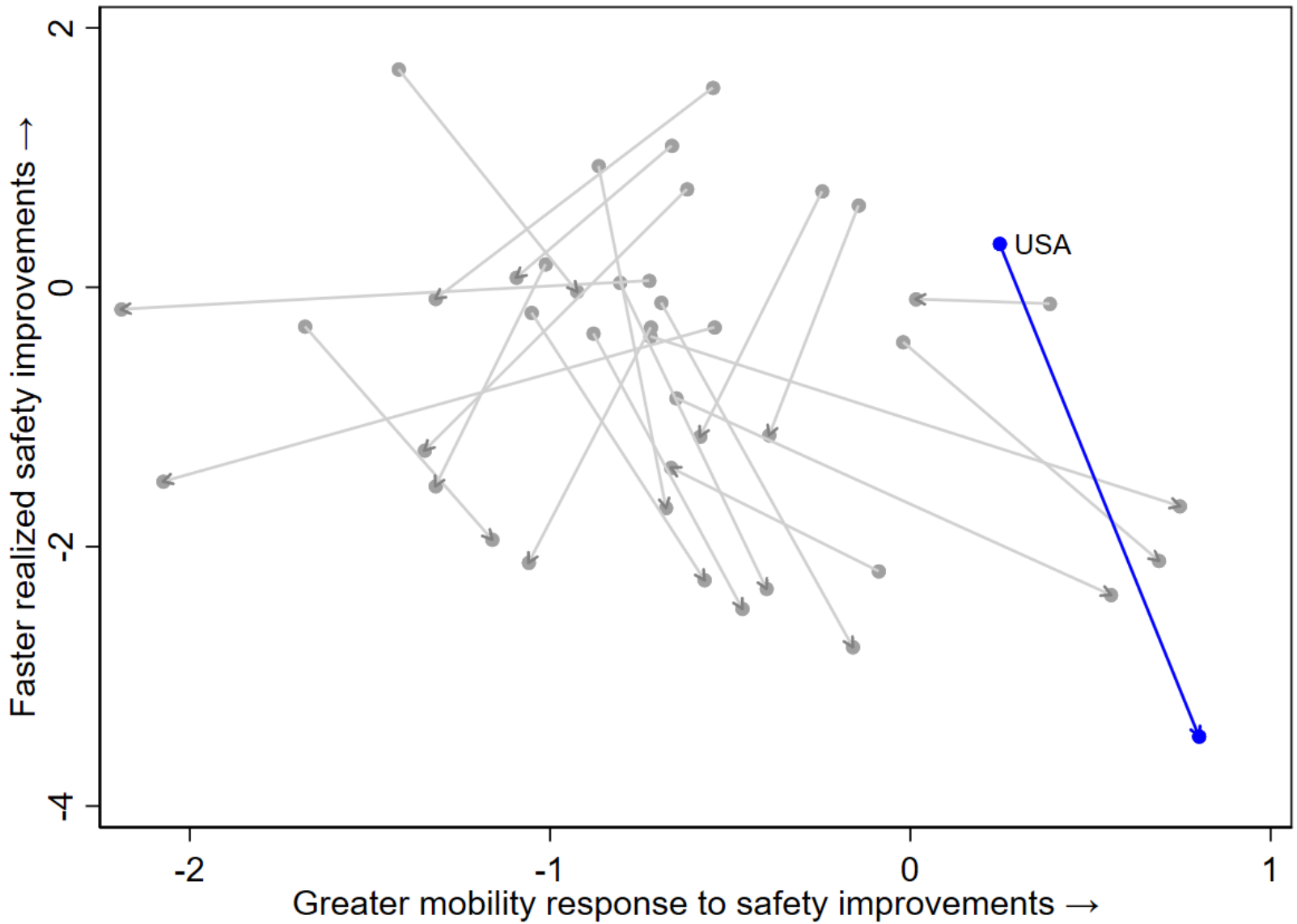
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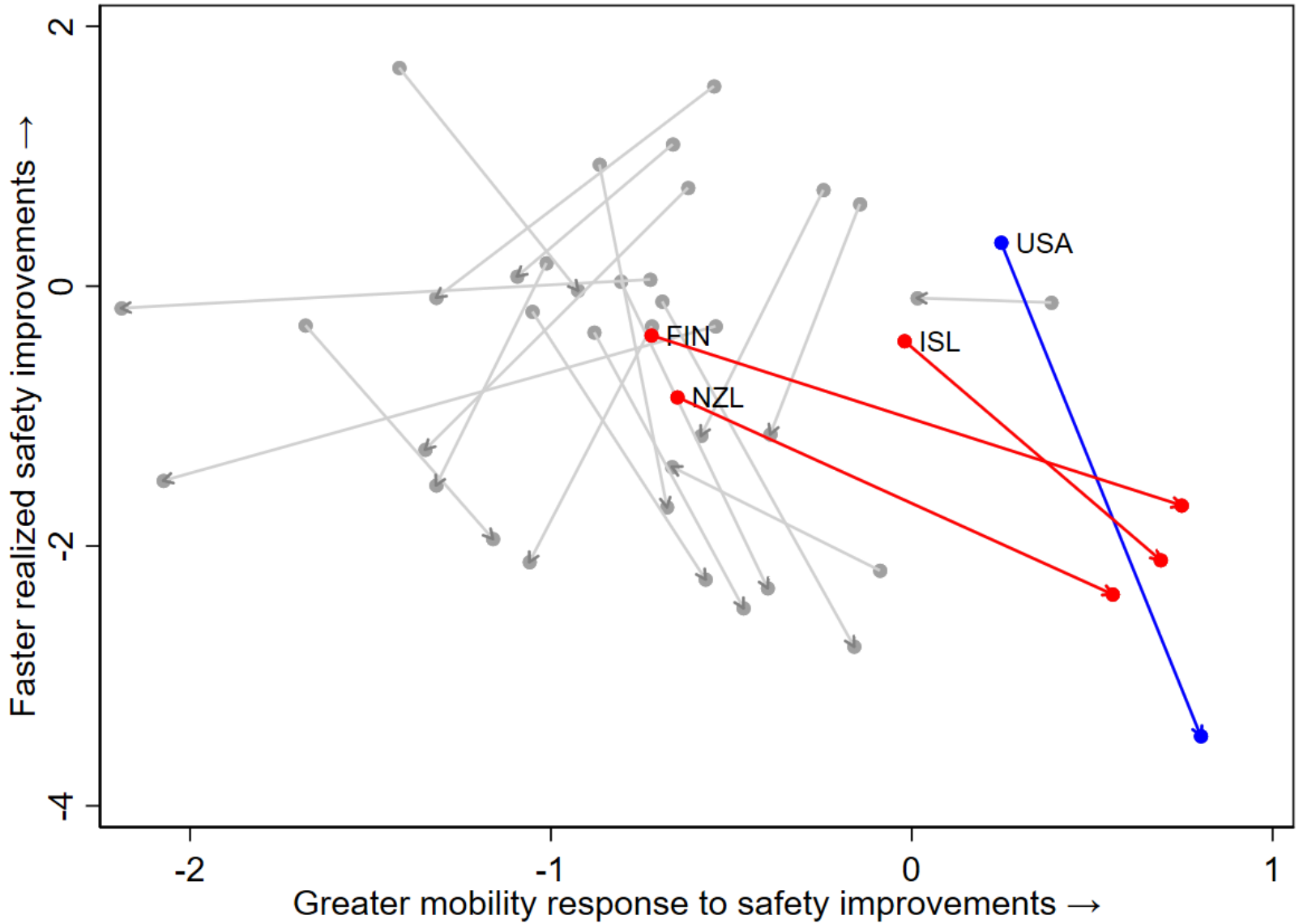
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- Let's arrange all countries before and after their kink.

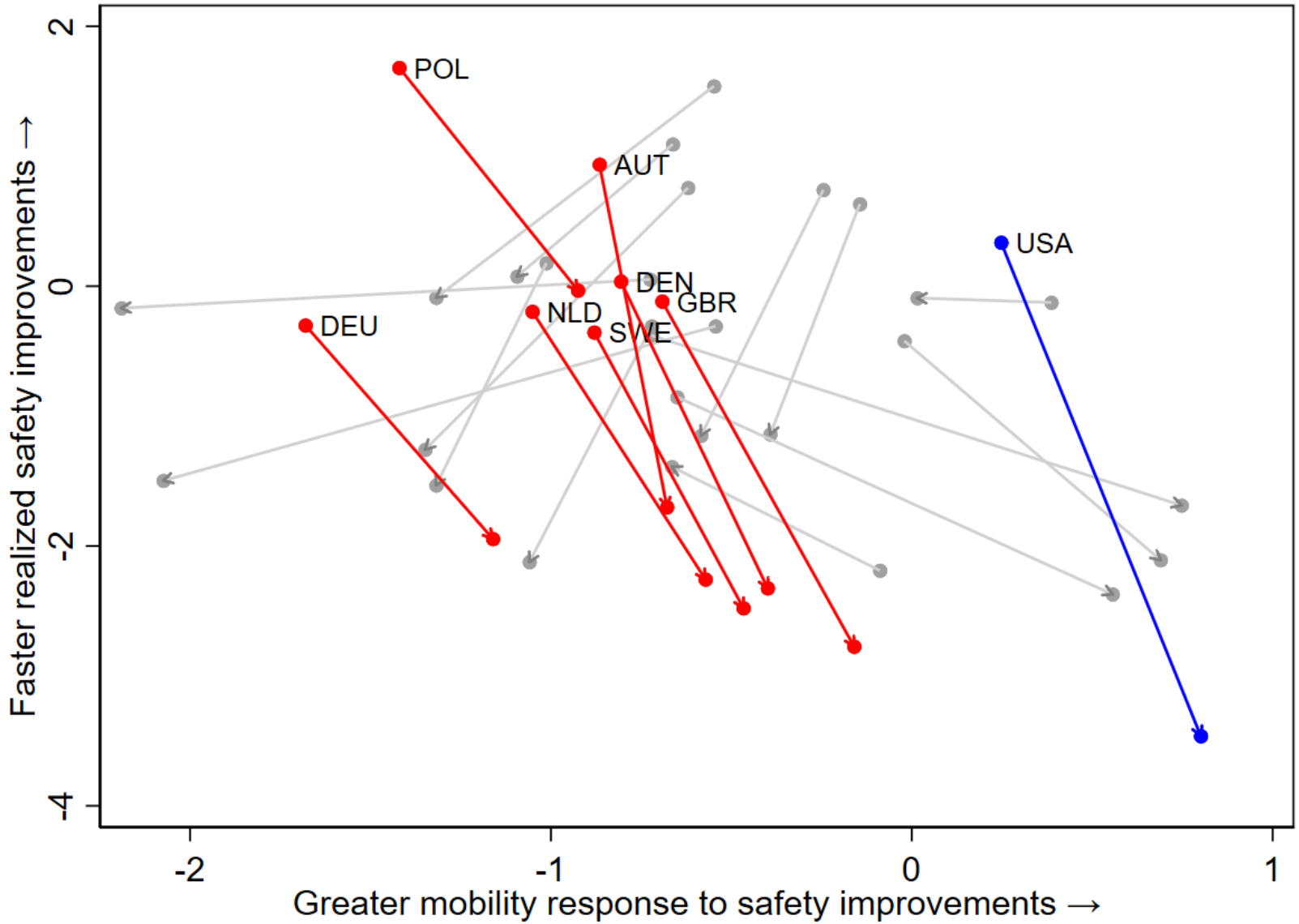
United States



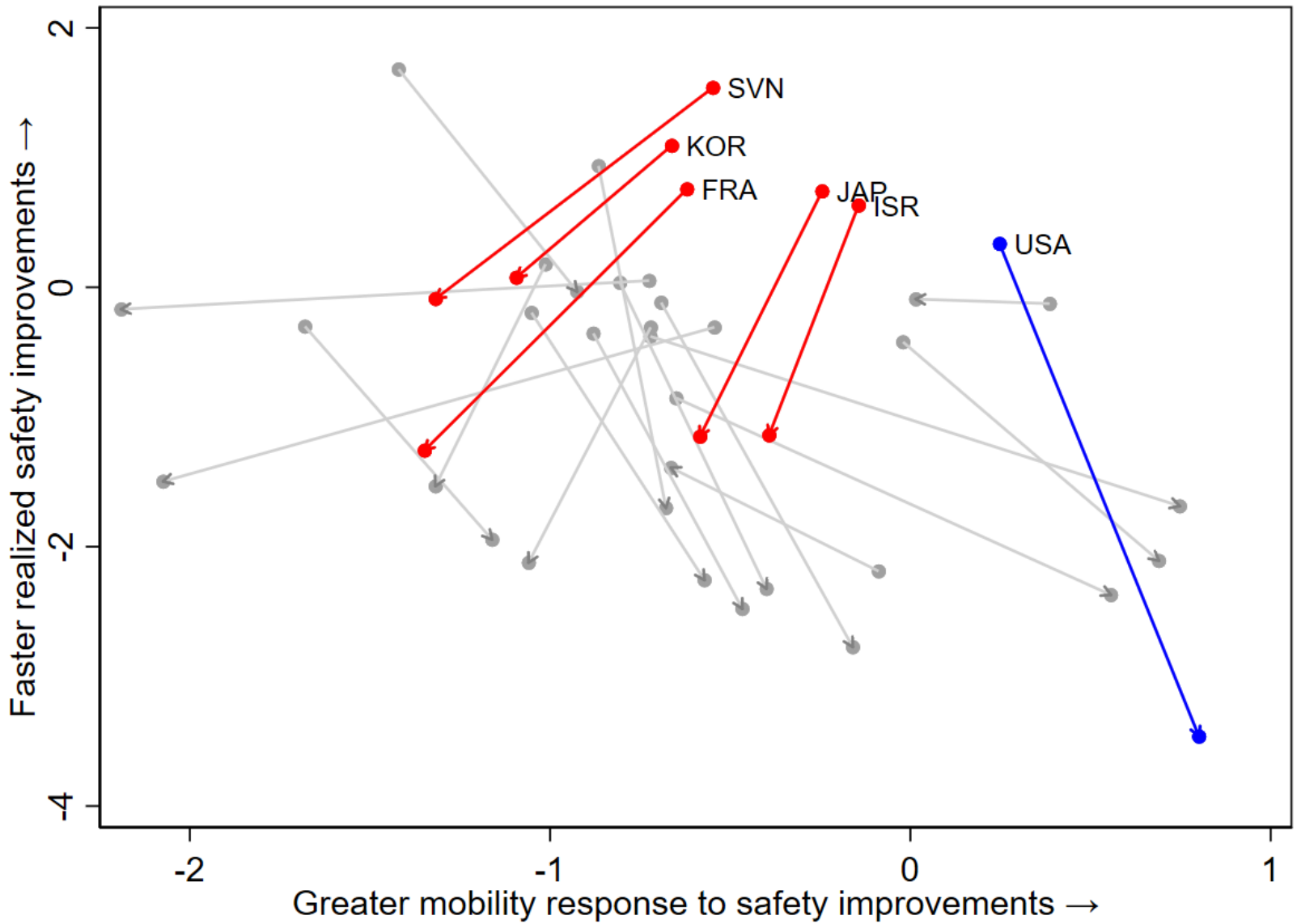
Countries Growing to Resemble the US



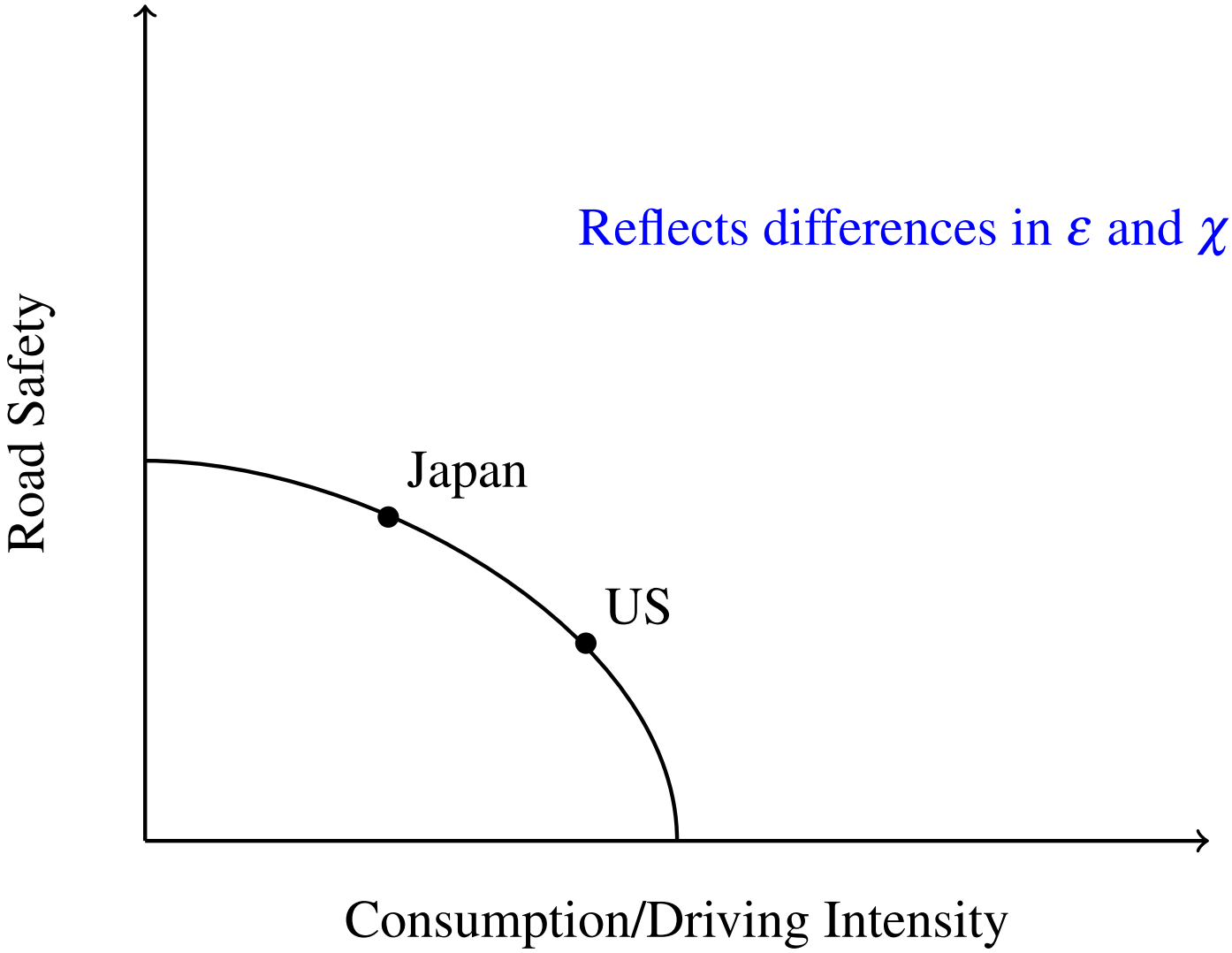
US + Countries on similar trend



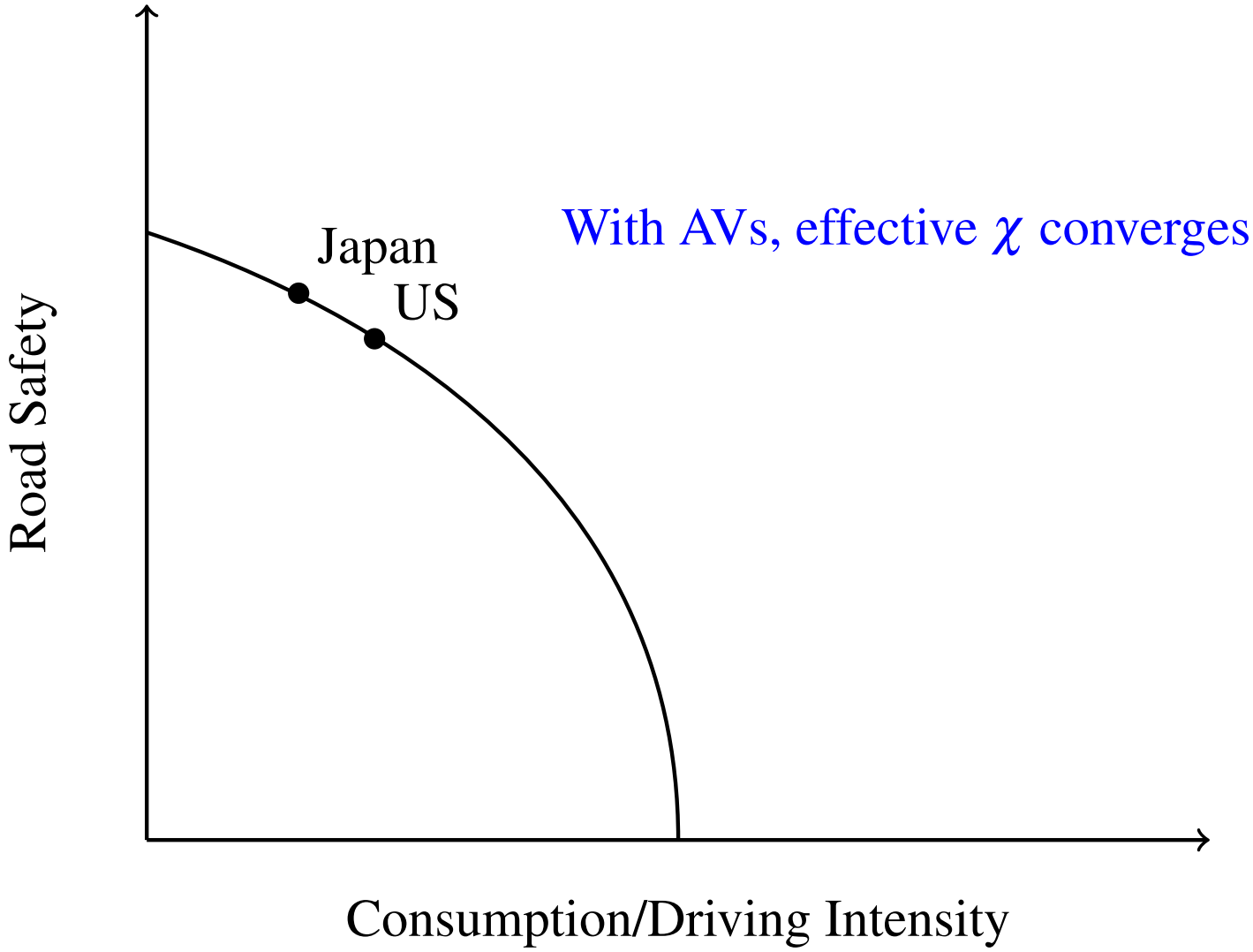
US + Countries on different trends



Auto Safety is a Choice that Reflects Tradeoffs



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Different Countries, Different Tradeoffs

Table: US and EU Fatality Rates per 100K Population, Selected Categories

	US	EU/Europe
Traffic Fatalities (2019)	11.0	5.1
Firearm Fatalities (2019)	12.1	1.4
Excess Heat Deaths	0.62	23.5
Total	23.82	29.0

Notes: 2019 US firearm fatalities from CDC, 2019 EU-27 firearm fatalities from Eurostat and Small Arms Survey; 2019 US Excess Heat Deaths from CDC, Heat deaths for the 51 countries in the UN European region are an annual average from 2000-2019 per WHO.

Countries arrive at very different solutions in different risky settings!

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  - Encourage deployment and adoption of autonomous vehicles