

The unintended consequences of immigration policies:

“The impact of 1920’s quota act in the US on breakthrough innovations”

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Research Question

- Did the quotas unintentionally decrease the likelihood of once-innovative regions producing breakthrough innovations?
- Our main goal is to investigate the impact produced by the quota acts on the breakthrough innovations in counties measured as those novel and impactful patents.

Historical Background

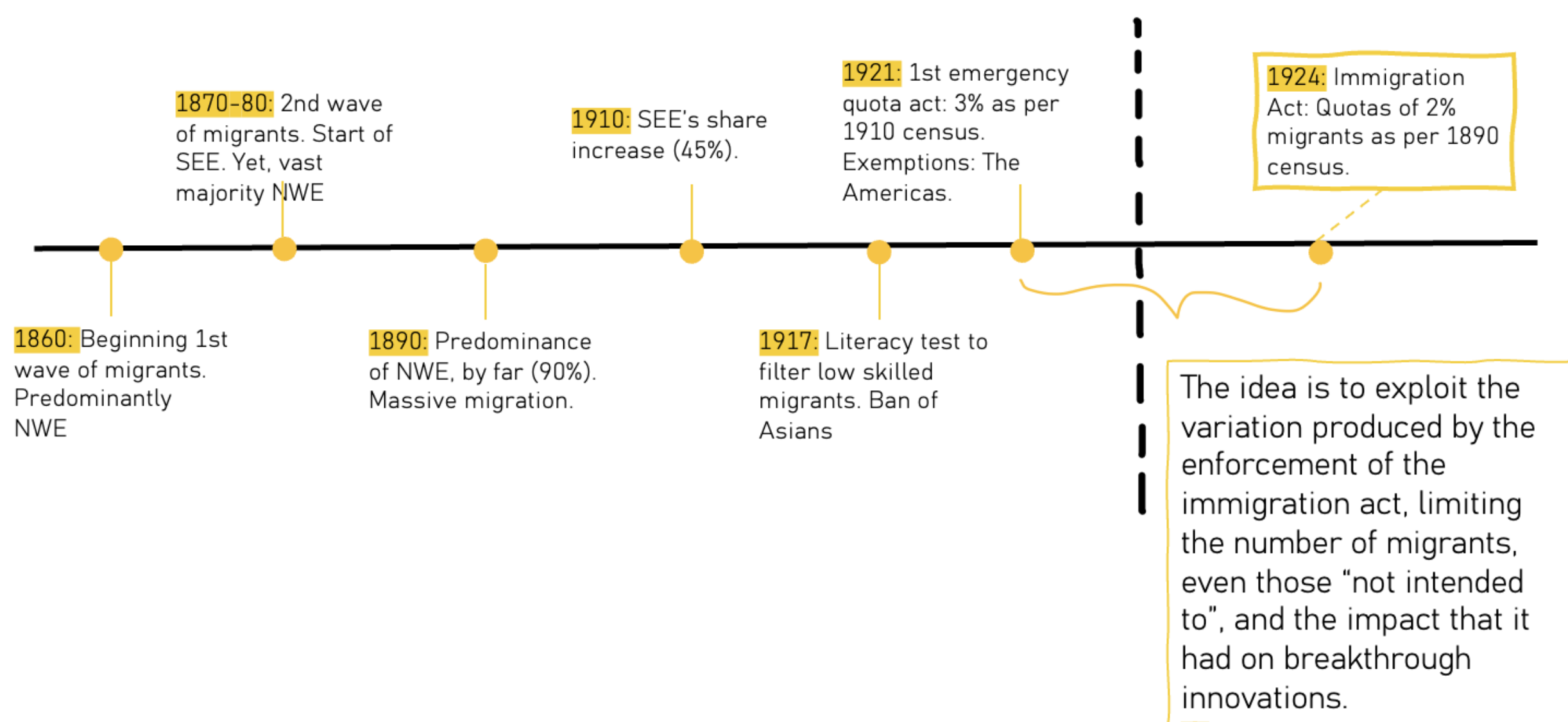
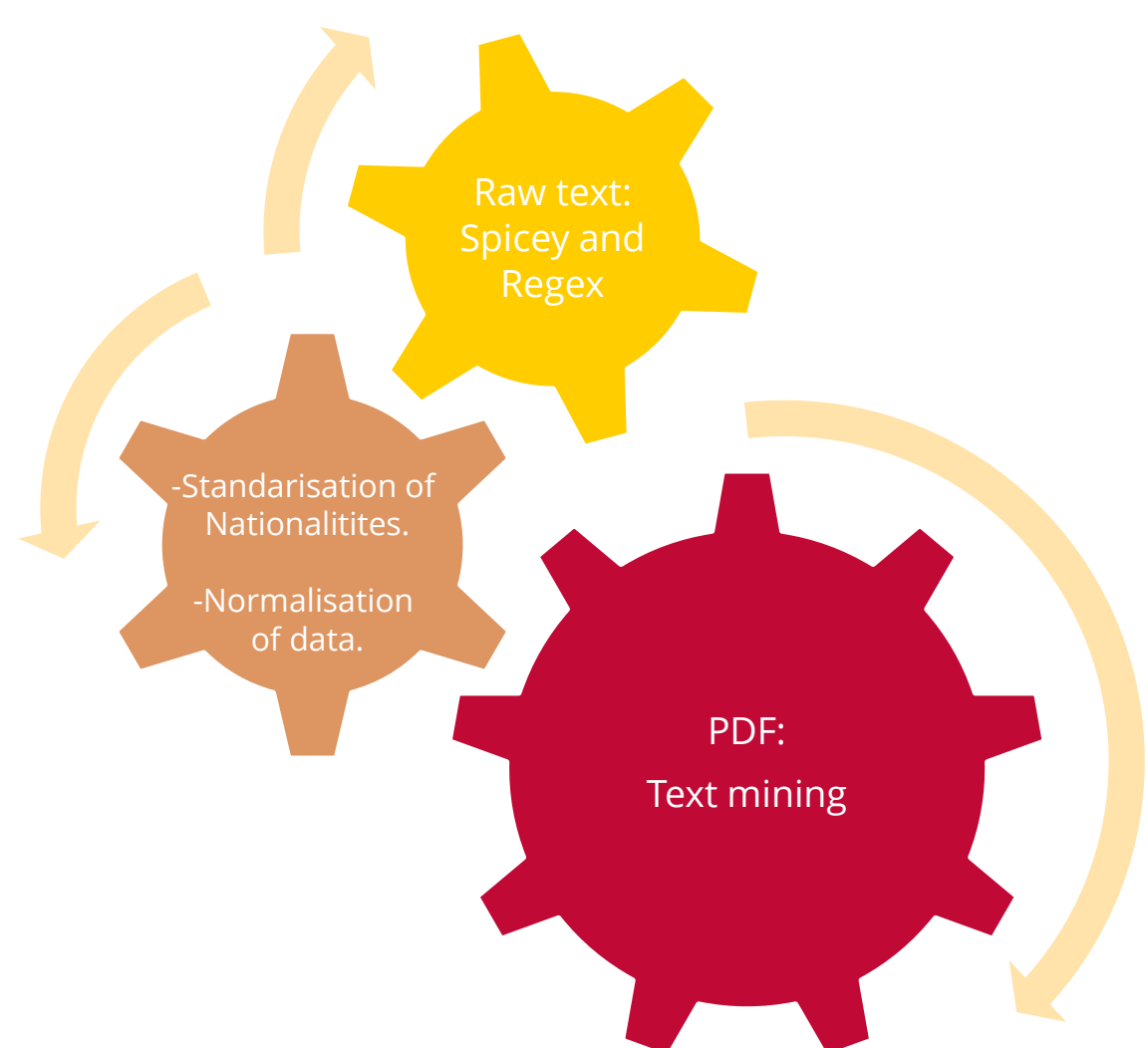


Figure 1. Historical sequence of the migration waves and the restrictions in the U.S.

Data



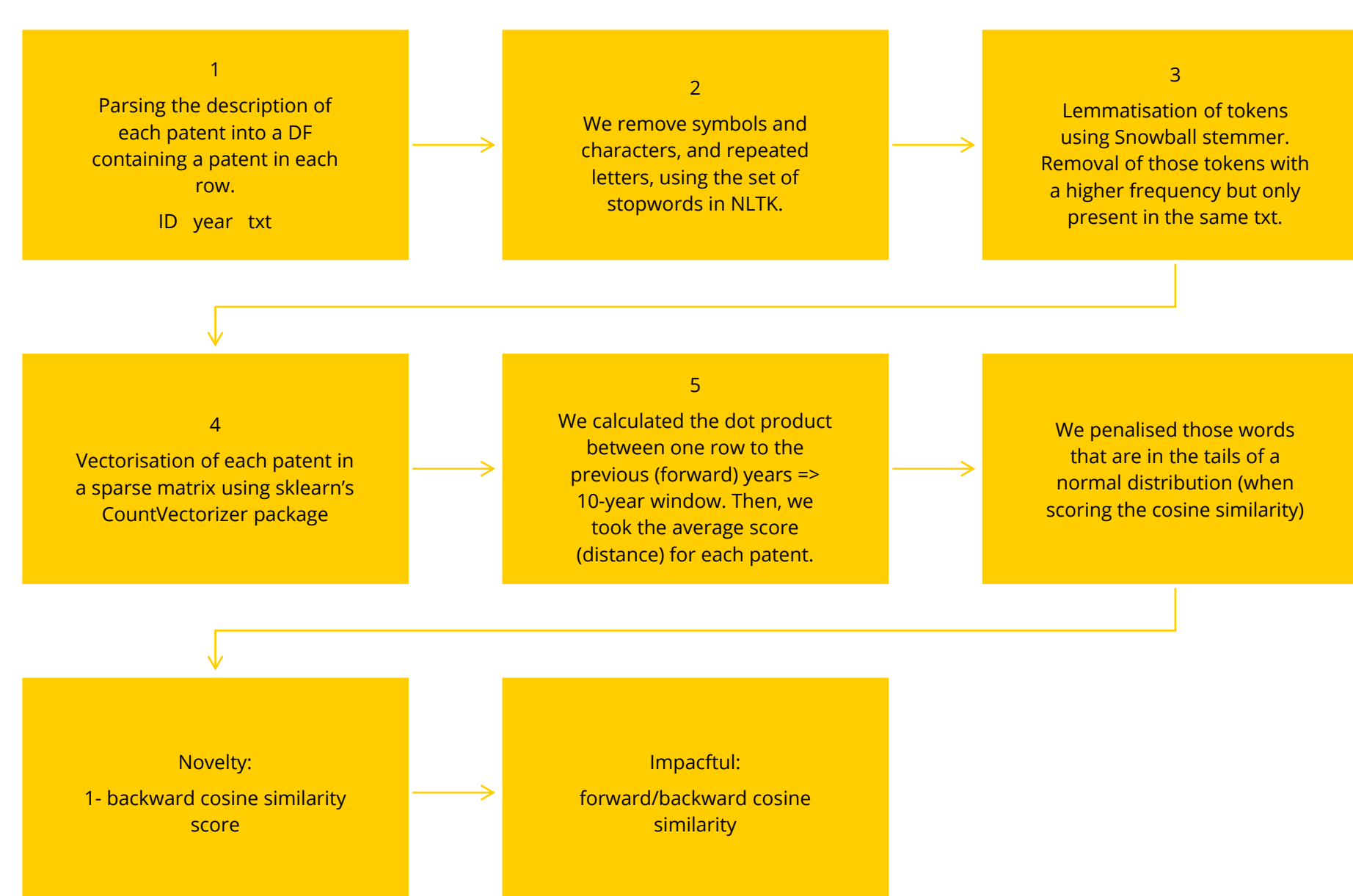
1. Google Patents

We retrieved PDFs from Google Patent to analyse through text mining particular data on inventors, their nationalities, their invention and their place of residence.

2. IPUMS

- 1850-1940 census data from the US.
- So far: County - decennial information.
- In progress: matching individual information to get data on inventors themselves (geographical, demographical and socio-economical)

Figure 2. Identifying Breakthrough Innovations: BI are the combination of those patents that are both novel and impactful.



Descriptive Statistics

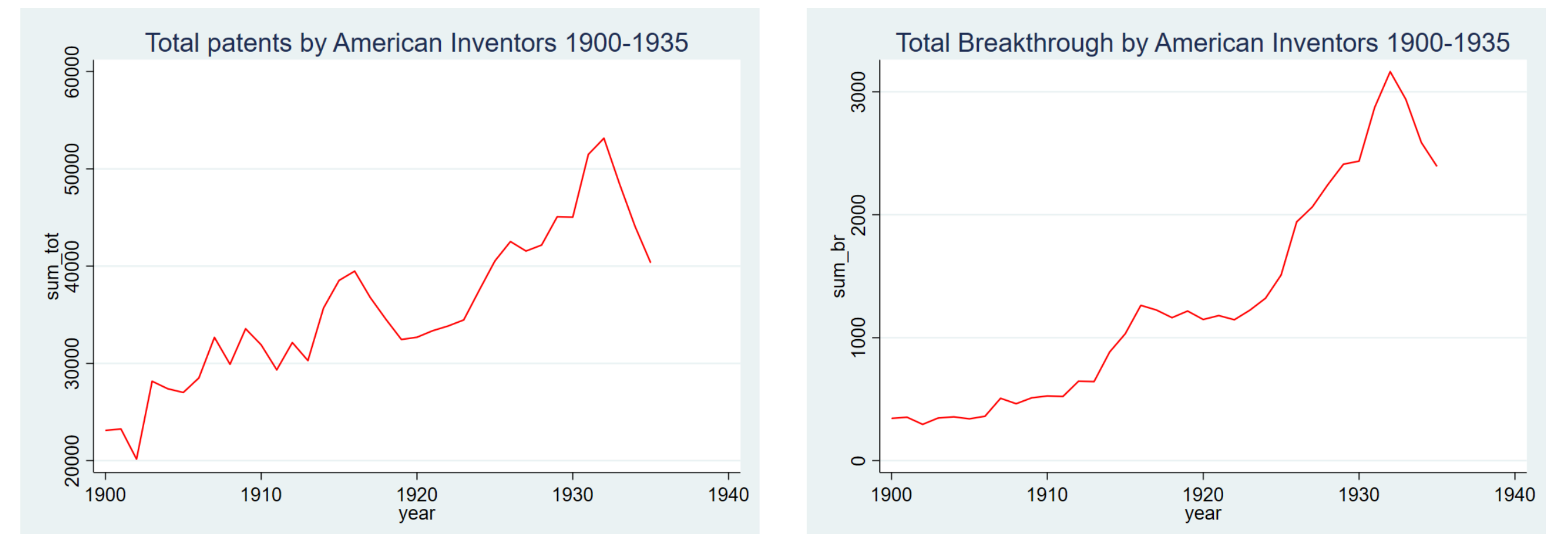


Figure 3 & 4. Trends showing the total number of patents and the total number of breakthrough innovations by American-born inventors only.

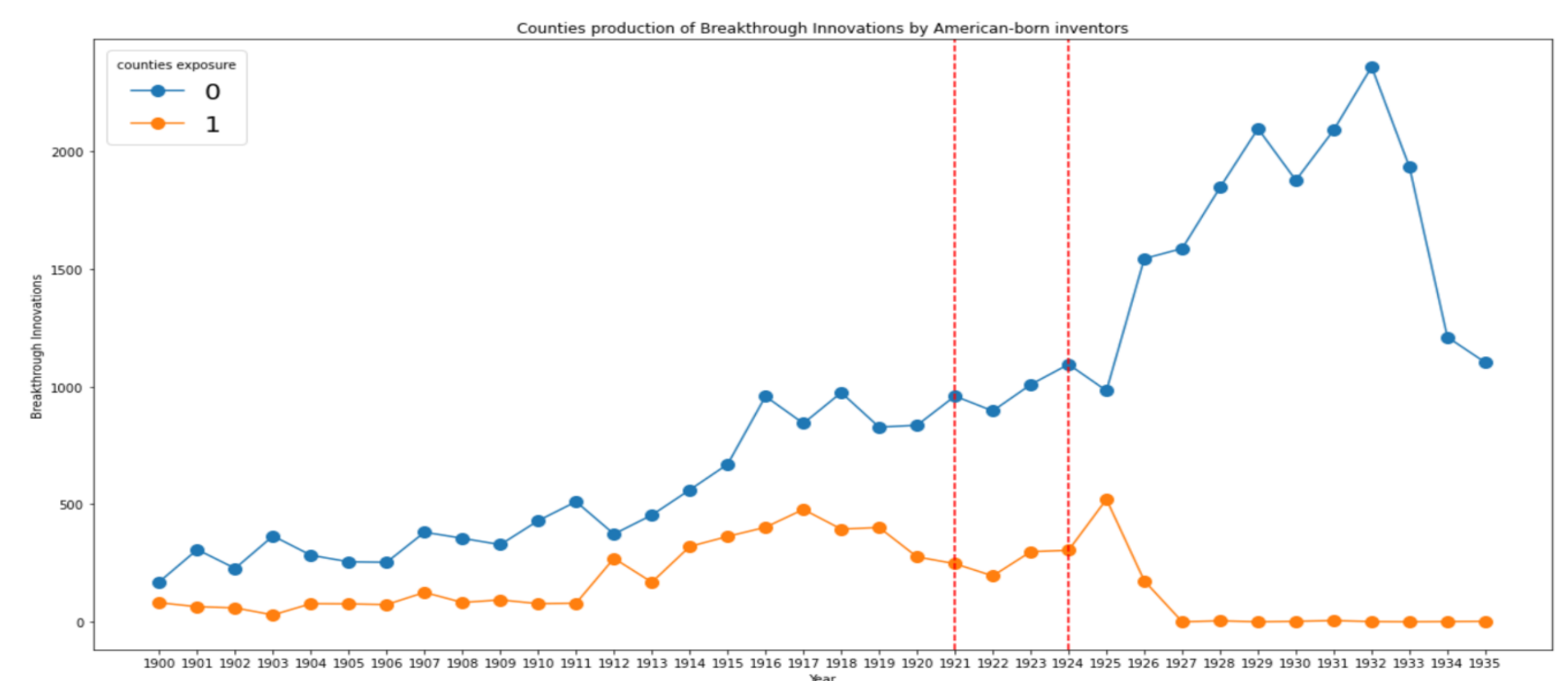


Figure 5. Parallel trend assumption on yearly basis.

Results & Discussion

VARIABLES	Innovations			
	Total sample		American-born inventors sample	
	OLS (1)	LPM (2)	OLS (3)	LPM (4)
exposure	282.274*** (0.000)	0.295*** (0.000)	261.183*** (0.000)	0.296*** (0.000)
did	-92.678 (0.139)	-0.251*** (0.000)	-75.907 (0.201)	-0.249*** (0.000)
post	-20.949** (0.010)	-0.044 (0.326)	-20.073*** (0.009)	-0.036 (0.444)

- The quotas might have unintended consequences on the production of breakthrough innovations in different counties across the US.
- These consequences affected more -on average- the invention output of American-born inventors due to a certain “shortage” of knowledge spillovers.
- The likelihood of BI, novelty and impactful patents decreased in highly exposed counties and technologies as a consequence (apparently) of the quotas.
- The unintended consequences were mainly for those prolific-inventive counties where NWE lived, as they were the most prolific inventors among migrants. However, the quotas were not meant to affect them particularly.

References:

Arts et al., 2021; Diodato et al., 2022; Ager et al., 2017; Rodriguez-Posse et al., 2014; Moser & Sam., 2020; Arkolakis et al., 2020; Ager & Worm, 2017; Doran & Yoom, 2020; Campo et al., 2020; Tabellini, 2018; Rodriguez-Posse et al., 2018; Esposito, 2021; Kelly et al., 2017