

*Robert Fogel*

*Nobelova nagrada za 1993.*



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# NAGRADA KAO REZULTAT SVESTRANOG I SMELOG ISTRAŽIVAČKOG RADA

## Rezime

Robert Fogel i Daglas Nort dobili su Nobelovu nagradu iz ekonomije 1993. godine za obnavljanje istraživanja ekonomske istorije uz primenu ekonomske teorije i kvantitativnih metoda u cilju objašnjenja ekonomske i institucionalne promene. Danas se Robert Fogel s pravom naziva ocem moderne ekonomske istorije i tvorcem termina kliometrija (Klio - grčka muza istorije). Osim što se svrstava u red najznačajnijih ekonomskih istoričara i ekonometričara, veliki je doprinos dao i izučavanju demografije, sociopsihologije i ekonomske politike.

**Ključne reči:** Robert Fogel, Daglas Nort, Nobelova nagrada, ekonomija, ekonomska istorija, kliometrija, istraživanja, ekonomska teorija, ekonometrija, demografija, sociopsihologija, ekonomska politika, projekat, železnica, ropstvo, SAD

**JEL:** B31, C81, J24, N7

*Robert Fogel*

*Nobel Prize for 1993*

# NOBEL PRIZE AS THE RESULT OF VERSATILE AND BOLD SCIENTIFIC RESEARCH

## Summary

Robert Fogel and Douglass North won the 1993 Nobel Memorial Prize in Economic Sciences for having renewed research in economic history by applying economic theory and quantitative methods in order to explain economic and institutional change. Today Robert Fogel is rightfully considered the father of modern economic history and the creator of the term cliometrics (Clio – the Greek Muse of history). Apart from being among the most significant economic historians and econometricians, he has greatly contributed to the research in the fields of demography, socio-psychology and economic politics.

**Key words:** Robert Fogel, Douglass North, Nobel Prize, economics, economic history, cliometrics, research, economic theory, econometrics, demography, socio-psychology, economic politics, project, railroads, slavery, USA

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*scientific  
review  
article*



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**R**obert Fogel i Daglas Nort dobili su Nobelovu nagradu iz ekonomije 1993. godine za obnavljanje istraživanja ekonomske historije uz primenu ekonomske teorije i kvantitativnih metoda u cilju objašnjenja ekonomske i institucionalne promene.

Robert Fogel se rodio u 1926. Njujorku, četiri godine nakon što su mu se roditelji i brat doselili iz Odese, Rusija. Prve godine u Americi su za Fogelove bile izuzetno teške, jer je to bilo u vreme Velike ekonomske krize. I pored toga, kako Robert ističe, bilo je to radosno domaćinstvo koje je u budućnost gledalo sa optimizmom, ali i sa verovanjem u vrednosti obrazovanja. Osim roditelja, podstrek da bude marljiv đak pružao mu je i 6 godina stariji brat svojim briljantnim intelektom.

Obrazovanje u javnim školama Njujorka koje je mladi Robert pohađao omogućilo mu je da stekne dobru osnovu za akademske studije, jer su nastavnici bili posvećeni poslu koji obavljaju, a po mišljenju Fogela ovakav izbor kvalitetnih predavača omogućila je ekonomska kriza.

## Od elektrotehnike do ekonomije

Nakon završetka visoke škole specijalizovane za prirodne nauke upisuje elektrotehniku na Kornel univerzitetu. Diplomirao je 1948, a nakon 8 godina je postdiplomac na Kolumbija univerzitetu u nameri da odbrani doktorski rad iz ekonomskih nauka. S obzirom na to da je na studijama pohađao kurs iz moderne historije, želeo je da u svom doktorskom radu kombinuje izučavanja iz historije i ekonomije, kako bi otkrio osnovne snage koje su uticale na tehnološke i institucionalne promene tokom vekova i da time ukaže na rešenja aktuelnih problema ekonomske nestabilnosti i nejednakosti. Radeći na doktoratu, postao je svestan koliko se malo zna o ovim velikim procesima i njihovim međusobnim vezama, te je počeo da svoja istraživanja usmerava na određena uža područja kako bi odgovorio na neka



po njemu značajna pitanja: Šta znamo o uticaju sistema fabrika na privredne i institucionalne promene u 19. veku? Koliki je doprinos novih tehnologija, kao što su železnički saobraćaj ili železare, ekonomskom rastu u SAD? Fogel je tada shvatio da mu je za odgovore na ova pitanja potrebna veća upotreba kvantitativnih pokazatelja i za svoje studije počeo je da koristi najnaprednije analitičke i statističke metode.

Na postdiplomskim studijama imao je sreće da saraduje sa najpoznatijim ekonomistima od kojih su neki bili i nobelovci. Na magistarskim studijama mikroekonomiju mu je predavao Džordž Stigler, dobitnik Nobelove nagrade 1982. godine, a američku ekonomsku historiju Karter Gudrič kod koga je magistrirao i koji ga je inspirisao svojom knjigom da počne da istražuje finansiranje, rizike i doprinose pacifičke železničke pruge, što je i tema njegovog magistarskog rada odbranjenog 1960. godine.

Nastavlja školovanje na Džons Hopkins univerzitetu gde je slušao predavanja Simona Kuzneca, dobitnika Nobelove nagrade 1971. godine, iz ekonomije, historije tehnoloških promena, demografije, statistike i prirodnih nauka. Na ovom fakultetu započeo je akademsku karijeru 1958. godine, gde ostaje do 1959. godine. Docent je postao 1960. na Ročesterskom univerzitetu, a doktorirao je 1963. godine. Mentor mu je bio Kuzneck koji je bio i najznačajnija ličnost na njegovim postdiplomskim studijama. Od 1964. do 1975. godine radi kao profesor na Čikaškom univerzitetu, a potom prelazi na Harvard. Na Čikaški univerzitet vraća se 1981. godine.

## Zasluge

Dobitnik je mnogih titula: počasne magistarske titule 1958. i 1959. godine univerziteta Harvard i Kembridž, počasnih doktora Ročester, Palermo i Brigham Omladinskog univerziteta od 1987. do 1999. godine. Kao direktor programa razvoja američke ekonomije u okviru

**R**obert Fogel and Douglass North won the 1993 Nobel Memorial Prize in Economic Sciences for having renewed research in economic history by applying economic theory and quantitative methods in order to explain economic and institutional change.

Robert Fogel was born in 1926 in New York, four years after his parents and his brother had migrated from Odessa, USSR. These first years in the United States were extremely hard for the Fogels, because that was the time of the Great Economic Depression. Despite that, as Robert underlines, they were a rather joyful household, optimistic about the future, and full of belief in the values of education. In addition to his parents, it was the intellectual brilliance of his six-year-old brother that encouraged him to be a diligent pupil.

The education in the public schools of New York that young Robert attended was an excellent preparation for his academic studies, given that his teachers were truly devoted to their jobs. According to Fogel's opinion, such a selection of quality lecturers was due to the economic crisis.

## **From Electrical Engineering to Economics**

Upon graduating from the school specialized in natural sciences, he enrolled at Cornell University to study electrical engineering. He graduated in 1948, and after 8 years he continued to post-graduate studies at Columbia University, intending to defend his doctoral paper in economic sciences. Given that during his studies he attended a course in modern history, in his doctoral paper he wished to combine research of history and economics, in order to discover the fundamental forces that determined technological and institutional changes over the centuries, thus pointing to solutions to the current problems of economic instability and inequity. Working on his doctoral paper, he became aware of how little was actually known about these large processes and their interconnections, hence he began to focus on certain narrower fields, in order to answer some of the questions he deemed important: What did we really know about the role of the factory system in economic and

institutional change during the nineteenth century? What was the magnitude of the contribution of particular new technologies, such as railroads or steel mills in the USA, to economic growth in the USA? Fogel concluded that to answer such questions, much greater use had to be made of quantitative evidence, so he set out to employ the most advanced analytical and statistical methods in his studies.

In his postgraduate studies he was lucky to cooperate with the most eminent economists, some of whom were Nobel Prize winners. At his master studies, George Stigler, the 1982 Nobel Prize winner, taught microeconomics, and Carter Goodrich taught American economic history. It was the latter that inspired him with his book to start researching the financing, riskiness, and benefits of the Union Pacific Railroad, which eventually became Fogel's master thesis, defended in 1960.

Fogel continued his education at Johns Hopkins University, where he attended the lectures of Simon Kuznets, the 1971 Nobel Prize winner, not only in economics, but also in the history of technological changes, demography, statistics, and the natural sciences. It was at this University in 1958 that he started his academic career, but stayed there only until 1959. In 1960 he became assistant professor at the University of Rochester, and gained his doctoral title in 1963. Simon Kuznets, who supervised his doctoral dissertation, was by far the most influential figure in his postgraduate training. From 1964 to 1975 he worked as a professor at the University of Chicago, after which he went to Harvard. He came back to the University of Chicago in 1981.

## **Merits**

Fogel has won many titles: 1958 and 1959 honorary master titles from Harvard and Cambridge Universities, and honorary doctorates from the University of Rochester, University of Palermo and Brigham Young University, in the period from 1987 to 1999. As the director of the program on the long-term Development of the American Economy (DAE), he worked at the National Bureau of Economic Research (NBER) from 1979 to 1991. He is a Fellow of the American Academy of Arts and

Nacionalnog biroa za ekonomska istraživanja radio je od 1979. do 1991. godine. Član je Američke akademije nauka i dopisni član Britanske akademije nauka.

U autobiografiji koju je objavio u vreme dodele Nobelove nagrade Fogel na jednom mestu govori o lepoti svog istraživačkog i profesorskog rada i osobama koje su imale značajnu ulogu u njegovom razvojnom naučničkom putu: "Druženje sa naučnicima i stalno učenje su dva izazovna aspekta života u nauci. Kada je neko angažovan da radi sa studentima koji su veoma radoznali i inteligentni, nikada nije sasvim jasno ko koga uči. Imao sam sreću da saradujem sa vrhunskim naučnicima koji su i izuzetni profesori, puni elana za svoj rad i sa ogromnim strpljenjem za zbunjene početnike. Njihove smernice su uveliko olakšale moje napore u obuci za istraživanje, uključujući i relacije između ekonomije, demografije i biomedicinskih nauka."

Fogel smatra da je, sem profesora i studenata, za njegov razvoj i uspeh zaslužna i supruga Enid Kasandra Morgan, koju je upoznao 1948. godine i koja mu je bila velika podrška svih narednih godina. Kako ističe "bila je njegov najverniji pristalica i najveći kritičar". Zahvaljujući njenom bavljenju decom i zaradi, on je mogao da se prepusti postdiplomskim studijama. Krepila mu je samopouzdanje kada su ga kritikovali i vraćala u realnost kada bi se previše upustio u apstraktne aspekte naučnih pitanja. Veliki uticaj na njegov rad imali su i sinovi Majkl i Stiven.

Najvažnije Fogelove istraživačke opuse možemo podeliti u tri dela: (1) koliki je uticaj imao razvoj železničkog saobraćaja na američki ekonomski razvoj; (2) američka robovlasnička ekonomija i (3) demografska pitanja proistekla iz istraživanja američke robovlasničke ekonomije.

## Prva knjiga i prvi projekat

**Prvi projekat** bavio se pitanjem uticaja tehnoloških promena na ekonomski rast, u okviru kojeg je nastojao da ispita koje vrste institucija podstiču tehnološke promene i kakav je uticaj tih promena na institucionalne aranžmane. Da bi to istražio, usredsredio se na razvoj železničkog saobraćaja i njegovom doprinosu na rast američke ekonomije u 19. veku. Knjiga *Pacifička železnica Unije:*

*slučaj preuranjenog preduzetničkog poduhvata* objavljena 1960. godine govori o ovim njegovim istraživanjima.

Fogel daje primer troškova prevoza žita koji su, na primer, železnicom upola manji od troškova transporta vodenim putem. Društvena ušteda je iznela oko 73 miliona dolara. Da bi izmerio ove uštede, Fogel je konstruisao ekonometrijski model prema kome je razlika u troškovima zavisila od veličine tovara, prosečne cene transporta, dužine relacije transporta i udaljenosti mesta istovara od tržišta. Uzimajući sve ove pobrojane elemente jednačine, Fogel je izračunao da je društvena ušteda korišćenjem železničkog transporta 213 miliona dolara.

Kako su dobra koje je uzео u obzir prilikom obračuna socijalnih ušteda predstavljala četvrtinu dobara koja su se transportovala 1890. godine, Fogel je procenio da su ukupne društvene uštede, nastale razvojem železničkog saobraćaja, četvorostruko veće u odnosu na prethodni rezultat - 800 miliona dolara ili 7% američkog društvenog proizvoda u toj godini. U daljim etapama istraživanja konstatovao je da železnica apsorbuje samo 2,8% ukupne proizvodnje drugih industrija (proizvodnja uglja, čelika, mašinska i druge industrije). Podaci su pokazali i da najveći američki ekonomski rast nije nastao u godinama izgradnje železničkih pruga, nego pre toga.

Fogel je na kraju zaključio da je razvoj železnice imao pozitivan uticaj na ekonomski rast u Americi, ali da nije ni jedini ni najznačajniji, kao što to nisu ni druga pojedinačna otkrića i ideje, već da je on rezultat "brojnih mogućnosti stvorenih akumulacijom znanja tokom svih prethodnih vekova".

Iako u podmaklim godinama, Fogel je veoma aktivan u nastupima na raznim skupovima i u medijima. Takođe, ne prestaje da radi u svojoj struci. Svoju angažovanost Fogel objašnjava ovako: "Volim da radim, ja se tako zabavljam. Ako bi neko želeo da mi napakosti, reći će mi da ne mogu više da radim!" Slično savetuje i drugima: "Nikako penzija. Ostanite aktivni i intelektualno i fizički!"

Sciences and a Corresponding Fellow of the British Academy.

In the autobiography published at the time he was awarded the Nobel Prize, Fogel at one point speaks about the beauty of his work as a researcher and professor, as well as about the persons who had played a significant role in his development as a scientist: "The companionship of scholars and the thrill of continuous learning are two wonderful aspects of a life in science. When one is engaged with students who are both very curious and very bright, it is never quite clear who is teaching whom. I have also had the good fortune of collaborating with senior investigators who are all exceptional teachers with enthusiasm for their work and with great patience for the bewilderment of novices. Their guidance greatly facilitated my efforts to train myself for research involving the interconnections between economics, demography, and the biomedical sciences."

Fogel believes that, in addition to his professors and students, for his development and success he also has to thank his wife, Enid Cassandra Morgan, whom he met in 1948, and who has greatly supported him over the years to come. As he points out, she has been "his most confident supporter and his keenest critic". Thanks to her care of their children and her earnings, he was able to devote himself to his postgraduate studies. She helped boost his self-confidence his findings provoked criticism, and pulled him back to reality when he was too preoccupied with the abstract aspects of scientific issues. His work has also been largely impacted by his sons, Michael and Steven.

The most significant Fogel's works can be

Though already an elderly man, Fogel remains active in his appearances at the various gatherings and in the media. Also, he has not stopped working in his professional field. Fogel explains his engagement in the following words: "I love it - I'm having fun. If you want to torture me, you'd tell me that I couldn't work!" His advice to other people is in the same line: "Don't retire! Remain active intellectually and physically!"

divided into three segments: (1) how huge an impact did the development of railroads have on economic growth in the USA; (2) the economics of slavery in the USA; and (3) demographic issues arising from the research of the economics of slavery in the USA.

## First Book and First Project

**The first project** dealt with the issue of technological changes impacting economic growth, within which he tended to examine which types of institutions encourage technological changes and what is the impact of such changes on institutional arrangements. In order to research this, he focused on the development of railroads and its contribution to the US economic growth in the 19<sup>th</sup> century. His book, *The Union Pacific Railroad: A Case in Premature Enterprise*, published in 1960, describes his investigations in this field.

Fogel stated the example of wheat transportation costs, which were, for instance, twice lower by railroads than the costs of transportation by natural waterways. Social savings in this case would have amounted to about 73 million dollars. In order to measure these savings, Fogel constructed an econometric model according to which the difference in costs depended on the size of the cargo, average transportation price, length of the transportation distance, and distance of the unloading place from the market. Taking into account all the above mentioned elements of the equation, Fogel calculated that the social savings due to the usage of railroad transportation amounted to 213 million dollars.

Given that the goods that he took into account when calculating the social savings represented only one quarter of the goods transported back in 1890, Fogel estimated that overall social savings, enabled by railroads development, were actually four times higher than the previously calculated amount – i.e. 800 million dollars, or 7% of the US gross national product in that year. In the further stages of his research, Fogel stated that railroads absorb only 2.8% of the overall production of other industries (production of coal, steel, machines and other industries). The findings also showed that the biggest economic growth in the US

## Kliometrija

**Drugi projekat** je pokrenut idejom da zajedno sa Stenlijem Engermanom predstavi tridesetak najboljih doprinosa koje su kliometričari (Klio - grčka muza istorije) dali razumevanju događaja iz ekonomske istorije. Tako je 1971. godine i nastala knjiga *Ponovno tumačenje američke ekonomske istorije*, koja se bavi i pitanjem američke robovlasničke istorije. Fogel i Engerman su u svojim istraživanjima došli do zaključaka, koji su potvrdili i dodatno ojačali ranije nalaze, da je robovlasnička ekonomija bila efikasnija od ekonomije slobodnih farmera. Fogel je dao i računicu da je sat robovskog rada u proseku donosio dvostruko veću količinu proizvoda nego sat rada slobodnih farmera.

Iako Fogelova istraživanja nisu promovisala niti veličala robovlasništvo kao društveni poredak već su davala rezultate ekonomske efikasnosti, izazvala su burnu reakciju neslaganja i negodovanja javnosti i nekih naučnih krugova. Fogel, međutim, nije bio naučnik koji je želeo da svojim radom veliča ropstvo, pogotovu ne sa moralne strane, već je želeo da ukaže na to da po ekonomskim osnovama ropstvo nije bilo neprofitabilan i neefikasan sistem, kako su ga mnogi istoričari predstavljali. O ovoj temi govori se i u knjizi *Vreme na krstu* (1974) autora Fogela i Engermana, koja nosi epitet najpoznatijeg i najkontroverznijeg istraživanja američkog ropstva.

## Demografija i ekonomski rast

**Treći projekat** je bio samo nastavak istraživanja američke robovlasničke ekonomije, ali na području demografije.

Obimna istraživačka građa prethodnog projekta omogućila je sagledavanje potpune slike mortaliteta stanovništva Severne Amerike od 1650. do 1919. godine. Ona je obuhvatila i sekundarne trendove u ishrani, blagostanju radne snage i produktivnosti rada. Fogel je došao do zaključka da je opadajući trend mortaliteta rezultat tehnološkog i psihosocijalnog napretka. Kvalitet ishrane i zdravlje populacije omogućuju i kvalitet radne snage, što može poslužiti i za objašnjenje uzroka ekonomskog rasta. Ekonometrijskom analizom Fogel je pokazao i da se polovina ekonomskog rasta Velike Britanije od 1790. godine i nadalje može pripisati boljoj ishrani radne snage.

**Novi projekat** ovog nobelovca je teorija stogodišnjih političko-religioznih ciklusa i njihov uticaj na oblikovanje ekonomske politike. Ovo područje istraživanja Fogel je obradio u knjizi *Četvrto veliko buđenje i budućnost egalitarizma* (2000). Pojam egalitarizma predstavio je uz pomoć istorije, religije, biologije, nutricionizma, demografije i ekonomije.

Robert Fogel se danas s pravom naziva ocem moderne ekonomske istorije i tvorcem termina kliometrija. Osim što se svrstava u red najznačajnijih ekonomskih istoričara i ekonometričara, veliki doprinos dao je i izučavanju demografije, sociopsihologije i ekonomske politike.

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had not occurred in the years of railroads construction, but before that.

In the end, Fogel concluded that the railroads development positively influenced the economic growth in the US, but that it was neither the only nor the most significant influence, just like this was not the case with other individual discoveries and ideas. Instead, it was the result of the “numerous possibilities generated by the accumulation of knowledge over the past centuries”.

## Cliometrics

**The second project** was inspired by the idea to present, together with Stanley Engerman, about thirty of the best contributions given by cliometricians (Clio – the Greek Muse of history) to the understanding of economic history events. Thus, in 1971 they published the book *The Reinterpretation of American Economic History*, which, among other things, deals with the history of slavery in the US. In their investigations, Fogel and Engerman came to the conclusions, confirming and additionally strengthening the previous findings, that the economics of slavery was more efficient than the economics of free farmers. Fogel also provided his calculation that one hour of slave work on average brought double the amount of products compared to one hour of free farmers’ work.

Although Fogel’s research did not promote or advocate slavery as a social order, but simply provided results of economic efficiency, it triggered tumultuous disapproval and dissatisfaction on the part of the public and some scientific circles. Fogel, however, was not a scientist wishing to glorify slavery through his work, especially since he objected to slavery on moral grounds. Instead, he wanted to prove that on purely economic grounds, slavery was not an unprofitable or inefficient system, as many previous historians had argued. This topic is also discussed in another book co-authored by

Fogel and Engerman, *Time on the Cross* (1974), which is considered to be the most famous and most controversial examination of slavery in the US.

## Demography and Economic Growth

**The third project** was just a continuation of investigation the economics of slavery in the US, this time, however, from the perspective of demography. The extensive research materials from the previous project enabled him to comprehend the full picture of the mortality of population in North America from 1650 to 1919. It also encompassed the secondary trends in nutrition, welfare of labour force and labour productivity. Fogel reached the conclusion that the declining mortality trend came as the result of technological and socio-psychological development. Quality nutrition and health of the population facilitated the quality of the labour force, which may serve as an explanation for the cause of economic growth. By means of econometric analysis, Fogel proved that one half of economic growth of Great Britain since 1790 onwards can be attributed to the better nutrition of the labour force.

**The new project** of this Nobel Prize winner is the theory of one-hundred-year-long political and religious cycles, and their impact on shaping the economic politics. This field of study was presented by Fogel in his book *The Fourth Great Awakening and the Future of Egalitarianism* (2000). He presented the term egalitarianism by means of history, religion, biology, nutritionism, demography and economics.

Today Robert Fogel is rightfully considered the father of modern economic history and the creator of the term cliometrics. Apart from being among the most significant economic historians and econometricians, he has greatly contributed to the research in the fields of demography, socio-psychology and economic politics.