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Political economy of infrastructure investment: Evidence from the economic stimulus airport grants

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ABSTRACT

We study impact of the political factors behind allocation of airport infrastructure grants under the American Recovery and Reconstruction Act (ARRA) of 2009. We find that – controlling for other factors – airports located in the districts with the larger Obama-McCain vote differential in November 2008 election received larger ARRA grants. At the same time, the district level election results are poor predictors of *whether* an airport will receive the grant. Senators' party affiliation and representatives' membership in the House Committee on Transportation and Infrastructure also appear as factors explaining allocation of the ARRA grants to the airports, especially in the State level analysis.

1. Introduction

The federal government plays a crucial role in the infrastructure investment in the United States, including allocation of funds to the airports. As airports are perceived to bring substantial benefits to the respective communities, federally funded airport infrastructure projects are both sought after, welcomed, and should be beneficial to the politicians capable of securing the funds. Complicated structure of the American political system creates possibilities for strong influence of political factors on the process of allocation of infrastructure investment funds.

This study offers the first look at the issue of impact of political factors on the aviation infrastructure investment in the USA. We take advantage of the American Recovery and Reinvestment Act (ARRA) of 2009 (more broadly known as the Stimulus) to examine contribution of political factors to allocation of the \$1.1 billion worth of the airport grants included into the package. The Stimulus provides an excellent case for studying political economy of airport (and more generally, infrastructure) investment, as far as involvement of the federal government is concerned. The law was set up rather hastily – Barack Obama was elected President in November of 2008, inaugurated on January 20, 2009, and ARRA became law on February 17, 2009. The criteria for the airport infrastructure projects to be funded under the ARRA were rather vague,¹ and the number of candidate projects clearly exceeded what could have been funded.² We can therefore suspect that the

airport infrastructure grants could have been used by the Administration, or the Congress as a mechanism to reward districts which brought more votes in the latest election. Additionally, members of the corresponding Congress Committees (in particular, of the House Committee on Transportation and Infrastructure) might have used ARRA as an opportunity to bring more money to their districts.

Examining politics behind the allocation of ARRA funds allows us to take a look at the politics behind distribution of the federal funds somewhat outside of the usual 'repeated game' context. Most of the funds have been distributed directly to the airports through a federal agency (Federal Aviation Administration). This is quite different from the usual pork barrel scheme, whereby votes are traded in exchange for appropriations for the pet projects included directly into the legislation.

Our data analysis showed association between the airport's location in the Congressional District with the larger Obama-McCain vote differential in November 2008 Presidential election, and the amount of the ARRA grant received by the airport. At the same time, district level election results are poor predictors of whether the airport receives the grant; and estimation results are not entirely robust to taking election results from the adjacent districts into consideration. We also detect rather robust evidence of the impact of Senate on the grant allocation process.

This paper contributes to the literature on public provision of infrastructure. Research in this area has been addressing the issues of both

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E-mail address: volodymyr.bilotkach@newcastle.ac.uk.¹ ARRA expressed preference for projects that could be completed within two years. FAA set a (technically non-binding) National Priority Rating (NPR) threshold of 62 out of 100 for projects to be considered for ARRA grants. Normal NPR threshold for regular Airport Improvement Program projects is 40–42 out of 100. See Section 2 of the paper for more details.² This point is explicitly acknowledged in FAA Stakeholder Guidance, American Recovery and Reinvestment Act (ARRA) of 2009, June 9, 2009.<https://doi.org/10.1016/j.ecotra.2017.12.003>

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effects of the publicly provided infrastructure on private sector productivity, and the *determinants* of the infrastructure investment. The former literature (e.g., [Aschauer, 1989](#); [Holz-Eakin, 1994](#)) is much richer than the latter. Studies of the determinants of public infrastructure investment include [Cadot et al. \(2006\)](#), [Castells and Sole-Olle \(2005\)](#), [Kemmerling and Stephan \(2002, 2008\)](#), [Fridstrom and Elvik \(1997\)](#), [Bel and Fageda \(2009\)](#). All the listed papers study infrastructure investment in Europe, and the latter has the most relevance to our paper, as it examines (and confirms the existence of) the impact of political factors on airport investment in Spain. On the US side, we find a lot of studies asserting the disproportionate power of the Senate³ (e.g., [Hoover and Pecorino, 2005](#)) and Congressional Committees (e.g., [Garrett et al., 2006](#)) in allocation of the federal funds across the jurisdictions. [Garrett and Sobel \(2003\)](#) find that states which are politically important to the President will have a higher rate of the disaster declaration; the authors also find the election year effects on the amounts of the Federal Emergency Management Agency (FEMA) disaster payments. The only studies of political determinants of transport infrastructure investment in the US are [McFadden \(1976\)](#) – an examination of project choices by California Division of Highways, finding limited impact of political determinants on the selection process; as well as [Knight \(2004\)](#), asserting that congressmen respond to common pool incentives when voting for transportation projects.

The rest of the paper is organized as follows. Section 2 discusses the relevant institutional details, including description of the airport infrastructure finance in the USA, and an outline of the American Recovery and Reinvestment Act of 2009. Section 3 presents the data. Section 4 outlines the data analysis methodology and reports the results, and Section 5 concludes.

2. Institutions

2.1. Airport infrastructure funding in the USA

Airport infrastructure in the United States is financed via five sources: bonds, State and local grants, passenger facility charges, and Airport Improvement Program (AIP) grants. This system has been finalized in the early 1990s, when airports have been allowed to levy the passenger facility charges.

The current regulatory framework US airports operate under is defined by the following pieces of legislation. The Airport and Airways Improvement Act of 1982 established the present Airport Improvement Program, and mandates that any airport accepting AIP grants charge reasonable fees to its aeronautical users. The Final Policy Regarding Airport Rates and Charges, issued by the FAA in 1996, establishes that the fees charged by the airports to its aeronautical users be cost-based. Finally, the 1994 FAA Authorization Act requires that airports be self-sustainable.

The AIP is a \$3 billion a year program, through which an airport can obtain a federal grant for the projects involving land acquisition, as well as construction or improvement of the airport infrastructure.⁴ Grants are available for both publicly owned and private designated reliever airports. Note that over eighty percent of the public access airports in the United States are publicly owned. Over the last five fiscal years (2005–2009), more than 1800 airports in the USA have made use of the AIP grants. An important function of the Airport Improvement Program is to ensure cost-based charges for the aeronautical services provided by airports. An airport suspected of

overcharging its airline customers risks losing its access to the AIP funds.

The distribution system for the AIP grants is complex, and includes a combination of the formula and discretionary grants. Each eligible airport is appropriated a certain amount out of the aviation trust fund, based primarily on the volume of aviation services provided (formula grants); and can compete for the non-appropriated funds (discretionary grants). The Federal Aviation Administration prioritizes the bids for non-appropriated funds according to the National Priority Ranking (NPR). NPR for each project is calculated according to the FAA developed model, which produces values between 0 and 100, “in accordance with the agency’s goals and objectives”.⁵ According to the FAA, “NPR is used in conjunction with qualitative factors including state and local priorities, environmental issues, impact on safety and performance, airport growth, pavement condition index, and others”.

Since 1992, the commercial service airports (those enplaning more than 2500 passengers per year and operating scheduled airline services) have been allowed to collect passenger facility charges (PFC). These charges are added to the airline ticket prices, and may not exceed \$4.50 per passenger, and \$18 per round-trip ticket. In 2008 PFC added up to over \$2.6 billion. Passenger facility charges are collected to fund federally approved airport infrastructure projects; they do not replace AIP grants. Rather, airports apply to FAA for the right to collect PFC for specific projects. Applications are typically approved – according to FAA, as of October 1, 2012, PFCs are levied at 385 airports, and only five applications have been turned down by the agency since the inception of the program.

Interestingly, the use of PFC is at odds with the International Civil Aviation Organization’s (ICAO) recommendation that aircraft weight-based rather than per passenger charges be used for infrastructure financing. IATA, however, disagrees with ICAO on this point, advocating per passenger charges. This viewpoint is understandable, as IATA is an airline industry association. [Czerny and Zhang \(2015\)](#) and [Czerny et al. \(2016\)](#) both suggest that per passenger charges are generally less preferred from the welfare point of view as compared to the aircraft weight based fees.

2.2. American Recovery and Reinvestment Act

Our study deals with the funds appropriated to the Federal Aviation Administration (FAA) for the airport infrastructure projects under the American Recovery and Reinvestment Act of 2009. The Act was signed into law by President Barack Obama on February 17, 2009, and was the first major piece of legislation adopted by the 111th US Congress. Passage of the ARRA was preceded – and precipitated – by the worst recession in the USA since the Great Depression.⁶ The economic stimulus bill was one of the important items on candidate Obama’s election agenda. Passage of ARRA was in part facilitated by fact that in November 2008 election Democratic Party gained control of both Houses of the US Congress. The economic stimulus provided by the ARRA totaled \$787 billion, roughly evenly split between the tax cuts; education, healthcare and other entitlement programs; and the federal contracts, grants and loans.⁷ Our study examines a small portion of funds falling into the latter category – almost \$1.1 billion made available to the FAA for Grants in-aid for airports.

According to the FAA, for the ARRA projects the agency raised its NPR threshold from the usual 40–42 to 62, emphasizing the need to cover the entire country and putting a somewhat higher priority on the renovation or replacement of the aging terminal infrastructure at the smaller airports. At the same time, the agency did reserve the right to fund the lower ranked

³ The US Congress consists of the House of Representatives and the Senate. While representation in the former is proportional to population; Senate includes two representatives from every State. The literature suggests that less populous states have disproportionate bargaining power under such circumstances.

⁴ AIP funding is limited to improvements related to aircraft operations, typically for planning and construction of projects such as; runways, taxiways, aprons, noise abatement, land purchase, as well as security, safety, or emergency equipment.

⁵ See http://www.faa.gov/airports/aip/grant_histories/airport_projects/ for more information.

⁶ According to the National Bureau of Economic Research, recession lasted from December of 2007 till July of 2009. In the course of the recession, unemployment rate in the US exceeded 10 percent for the first time in over twenty years.

⁷ Detailed information is available on the web-site www.recovery.gov established by the US Government and dedicated to ARRA.

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