

# Music in the Air:

## Estimating the Social Return to Cultural Amenities

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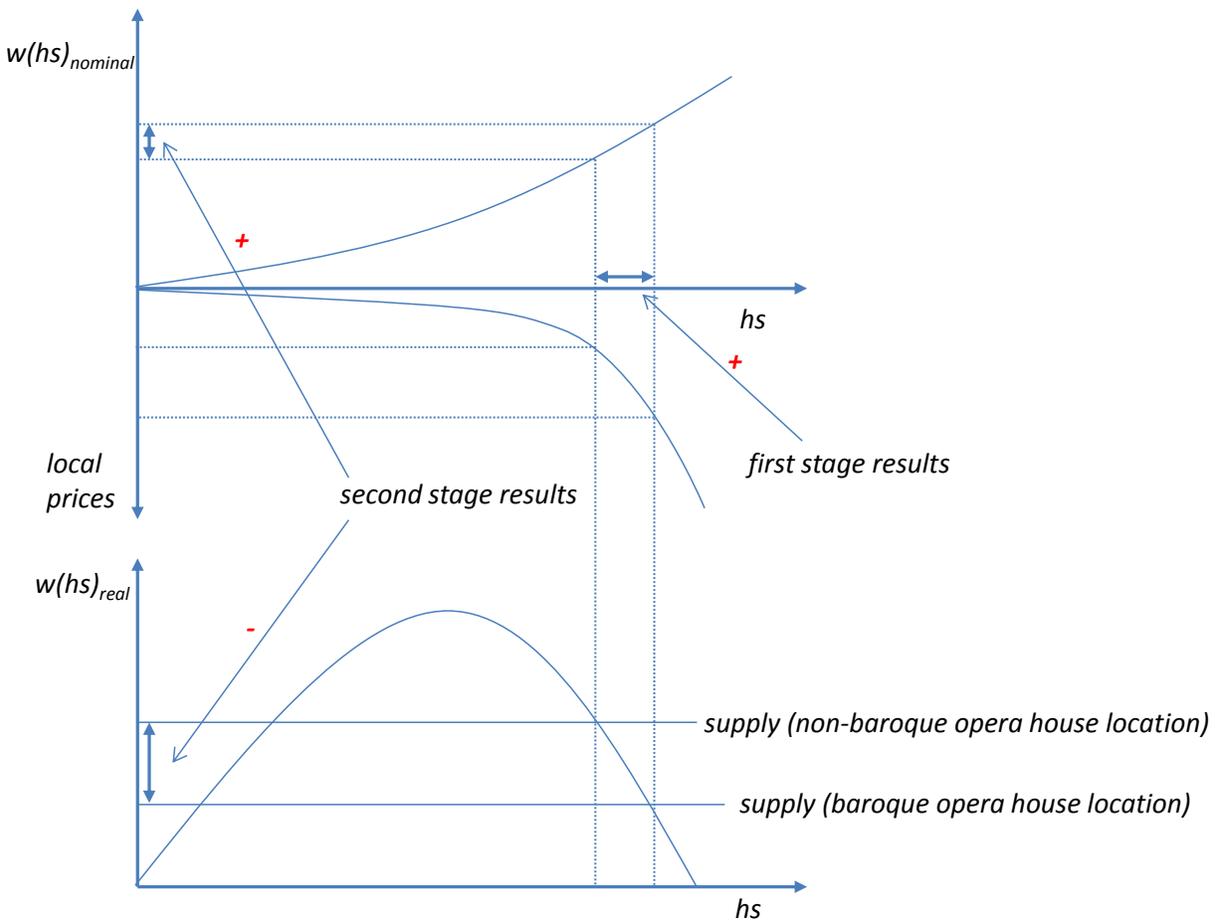
## Extended Abstract

This paper builds on the argument that cultural amenities benefit all individuals in a community which would justify the provision of public money. We argue that cultural amenities represent a consumptive amenity that attracts high skilled workers who exert knowledge externalities. These knowledge externalities lead to increasing returns to scale in local production. However, the inflow of high skilled workers also comes at a cost, namely increased local prices. Assuming that high-skilled workers are completely mobile the labor supply curve is a horizontal line (cf. Figure 1). The level of labor supply is determined by a location's consumptive amenities. The relationship between the share of high-skilled workers ( $hs$ ) in a location and high-skilled workers' nominal wage ( $w(hs)_{\text{nominal}}$ ) is upward sloping because of knowledge externalities in production that overcompensate a negative supply effect. Local prices increase with the share of high-skilled workers. Provided that the marginal increase in cost of living begins to dominate the marginal increase in wages at some point, real wages are a bell-shaped function of the share of high-skilled workers. In a stable spatial equilibrium, this simple model suggests that a high-amenity location's share of high-skilled workers may be suboptimal as the increase in local prices offsets the benefits of increasing agglomeration economies.

We test the predictions of this simple model by estimating (1) nominal wage and (2) real wage equations for the population of German workers subject to social security in the period 2004-2008. We use opera houses as measure for cultural amenities. In line with that we find the share of high-skilled workers in opera house locations to be significantly higher than in non-opera-house locations. We further find that a higher share of high-skilled workers has a positive effect

on high-skilled workers' nominal wages. However, once we deflate nominal wages with a local price index we find a negative relation between real wages and the share of high-skilled-workers.

Figure 1: Agglomeration Economies, Local Prices, and Consumptive Amenities



To overcome endogeneity concerns when analyzing the co-agglomeration of high-skilled workers and cultural amenities across regions, we draw on a quasi-natural experiment in German history that exploits the exogenous spatial distribution of baroque opera houses built as a part of rulers' competition for prestigious cultural amenities. These opera houses were built for reasons that are unrelated to economic prosperity today. The only way they influence regional prosperity today is through their consumptive amenity value as they induced a persistent cultural scene.

Indeed, baroque opera house locations show a significant larger cultural scene today than opera house locations with a non-baroque opera house. Using exogenous spatial distribution in cultural amenities, we run IV regressions. In the first stage, we instrument the share of high-skilled workers with the distance to the next baroque-opera-house. The second stage results corroborate the positive effect of the share of high-skilled workers on high-skilled workers nominal wages and the negative effect on real wages. Our findings suggest that cultural amenities do have a public value as they increase high-skilled, skilled and unskilled workers' productivity. However, these returns are absorbed by higher local prices that eventually benefit land owners. This finding is symptomatic for place- but not people-focused policies.