Migration externalities in Chinese cities

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ABSTRACT

We analyse the impact of internal migration in China on natives' labour market outcomes. We find evidence of a large positive correlation of the city share of migrants with natives' wages. Using different sets of control variables and instruments suggests that the effect is causal. The large total migrant impact ($+10\%$ when one moves from the first to the third quartile of the migrant variable distribution) arises from gains due to complementarity with natives in the production function ($+6.4\%$), and from gains due to agglomeration economies ($+3.3\%$). Finally, we find some evidence of a stronger effect for skilled natives than for unskilled, as expected from theory. Overall, our findings support large nominal wage gains that can be expected from further migration and urbanisation in China.

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1. Introduction

In recent decades, China has witnessed a massive internal transfer of labour. By fuelling Chinese cities with millions of non-local workers, the so-called "Great Migration" plays a crucial role in the urbanisation process of the country. The vast majority of migrant workers come from rural areas, although urban-to-urban migration also exists. Rural migrant workers – defined as agricultural people working and living outside the township of their household registration for more than 6 months – were estimated at 153 million in 2010, a rough doubling over the decade. As of 2010, they accounted for about 70% of the "floating" population[1] and 44% of urban employment (Chan, 2012).[2]

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[1] The floating population comprises all people with no local residency rights. It includes both migrant workers and their dependants (non-working people), originating from either rural or urban areas. In contrast, it excludes people who obtained a change in their household registration.

[2] The share of migrants in local employment sharply increased over the last two decades in China. Using the 2000 Census data, Cai et al. (2008) estimate that migrants, both rural and urban, accounted for 19.6% of the employment in China's cities (excluding townships) in 2000.

Internal migration is the main force of incremental urban population since the end of the 1990s. Yet migrant workers face major inequalities in Chinese cities, primarily because they are denied the status of city dwellers as long as they do not hold a local household registration or *Hukou*. Established in 1958, the *Hukou* system assigns every Chinese citizen a registration status (*Hukou*) that records not only their place of residence but also their type of registration. The *Hukou* type classifies people into "agricultural" or "non-agricultural", a classification which is usually referred to as "rural" and "urban" *Hukou*. By granting differential access to welfare benefits between urban and rural residents and between local and non-local residents, and by requiring official approval for a change in *Hukou*, the system has strongly restricted population mobility for decades. Nowadays, most migrants, especially those holding a rural registration, still hold their hometown *Hukou* and remain marginalised citizens in cities. In particular, they are denied equal access to public services; they face poor and unsafe working conditions; and they work primarily in the informal sector (Cai et al., 2008; Démurger et al., 2009).

This paper estimates the impact of migrants on local residents' nominal wages. As the migrant population is getting increasingly larger both in number and as a share of the local resident population, and despite the concentration of migrants in some specific segments of local labour markets, concerns have been raised regarding their potentially negative impact on local residents' labour market outcomes. This fear mostly concerns rural migrants, who are significantly less educated than their urban counterparts (Démurger et al., 2009; Deng and Li, 2010). By creating a large unskilled labour supply shock, the inflow of rural migrants could crowd out job opportunities for local workers and exert a downward pressure on wages.

Such concerns mirror similar issues raised in developed countries regarding international migrants. In their thorough review of the large and much-debated literature on the effects of immigration on local economies, Lewis and Peri (2015) conclude that immigration has a positive impact on local wages for most native-born workers in industrialised countries. In the case of U.S. immigration, earlier studies found dominant adverse effects on the economic status of the least-skilled competing native workers (Borjas et al., 1997; Borjas, 2003) but more recent contributions show that the impact depends on immigrants' and natives' respective skill distribution and how native workers move across skill cells in response to immigration (Card, 2005; Ottaviano and Peri, 2012; Peri, 2012). Immigrants typically differ from native workers in terms of age, education and occupation. As summarised by Lewis and Peri (2015), these differences in skill characteristics have a number of theoretical implications that must be taken into account when estimating the wage effect of immigration. First, the effect depends on the degree of substitutability or complementarity among immigrant and native workers, which itself depends on natives' characteristics. Second, when confronted with immigration, native workers may chose to move either across space or across occupations in response to increased competition, and this mobility may mitigate the potential adverse effect of immigration. We show for China that migrants do exert quite a large positive effect on local residents' wages, be they skilled or unskilled, and that the effect is more positive for skilled workers, as expected from theory.

Most empirical studies focus on international migration in OECD countries (Docquier et al., 2014), and systematic evidence is missing on how migration affects local productivity and wages in large developing countries, including not only China at the forefront, but also India or Indonesia. Moreover, the change of geographical scale for such countries and the relative smaller share of international migrants with respect to national ones makes it important to assess the role of internal migration. This paper contributes to filling the gap by assessing the extent to which internal migration in China affects urban residents' wages. Besides the effects identified in the literature on international migration, the simple increase in urban population induced by migration flows may also be beneficial to labour productivity through standard agglomeration economies.[3] A further contribution of this paper is to propose an empirical strategy to decompose the migrants' impact on local urban workers into the part due to their substitutability/complementarity in the production function and the part due to agglomeration effects.

We proceed in two steps. We first introduce city fixed effects in a standard individual wage equation and assess the relative explanatory power of individual, firm and city effects. Among other things, we highlight the large role of city effects in China. In a second step, we explain the city fixed effects by both the share of migrants in local employment and a number of city variables capturing agglomeration economies. As detailed in Lewis and Peri (2015) and in Combes and Gobillon (2015), the estimation of both the migrant impact and agglomeration effects on individual wages raises a number of specific methodological issues, which we consider here. First, workers may sort spatially according to personal characteristics (e.g., their skills), which generally affects their labour outcome. If this is the case, it may be difficult to identify separately the role of local effects and the role of the workers' characteristics on their wages. We present evidence of a quasi-absence of local resident workers' sorting according to their observed skills across Chinese cities. Sorting on unobservable variables not correlated to observables remains a possibility, but it is highly unlikely in a country where mobility has been strongly restricted for decades. Second, and most importantly for measuring migration externalities, the estimation of the impact of local variables is almost inevitably plagued by a reverse causality bias. If large locations where the share of migrants is high enjoy higher productivity, and therefore higher nominal wages, then higher wages should also attract more workers, especially when they are mobile, thus reversing the causality. We attempt to estimate the causal impact of migrants through a thorough instrumentation strategy detailed in Section 3.2.

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[3] The standard explanation provided by economic geography for the positive impact of urban scale on productivity consists in a series of agglomeration effects that include pure knowledge spillovers, the sharing of inputs, and the pooling of the labour force. See Duranton and Puga (2004) for a thorough review of the micro-foundations of these effects and Combes and Gobillon (2015) for a survey of the empirics of agglomeration economies.