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Why does the queue keep growing? The relationship between migration and rental housing queues in Sweden

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Abstract

The Swedish rental market is uniquely formed in that a rental queue system exists, rather than a free rental market. Meanwhile, migration continues to be relevant and evolving in the Swedish context. This paper investigates the relationship between international and internal migration on the rental queue, both on the general level, and in the Stockholm context. Findings suggest that foreign-born migration is consistently impactful across all dimensions, where as certain forms of internal migration are more impactful in the localized Stockholm context only.

1. Introduction

Migration and the housing market have been proven to have a close relationship in a number of papers in the past, with migration usually serving to increase house prices (Saiz 2007; Degen and Fischer 2009; Gonzalez and Ortega 2012). This has been found to hold also in the Swedish context, despite migration flows having been quite diverse over time, ranging from refugees to high-income migrants (Tyrcha and Abreu 2019). Generally, these relationships have been found to hold, both in Sweden and abroad, for the rental market as well, with a positive relationship also being found (Saiz 2003; Mussa et al 2017; Tyrcha 2019). However, despite positive impacts being found on the rental market in the Swedish context, the impact of migration on housing institutions has not been fully investigated.

Indeed, the Swedish rental market functions in a relatively unique institutional context, owing both to the rental ceiling that is in place (with rents not being set freely on a free market), and to the allocation system for housing that is in operation in Swedish major cities. On the Swedish rental market, properties are not advertised on the free market. Instead, a queuing mechanism exists, with properties being allocated to people in the queue as they become available, effectively on a first come first serve basis. In this paper, I intend to investigate the impacts of migration on the length of the rental queue, in order to establish whether there is an impact or relationship between the two, and whether policy initiatives potentially need to be adapted in order to reflect the nature of this relationship.

2. Background

Though there has been a considerable rental queue on the Swedish and Stockholm rental markets in the past decades, the length of this queue has increased drastically over the past few years. Indeed, between 2005-2015, statistics from the Stockholm rental queue show that the average time spent in the queue before receiving a rental apartment has almost doubled from 4.7 years to 8.2 years, while the number of people in the queue also increased markedly, by almost 300% (Bostadsförmedlingen 2016). It is noteworthy that subletting property remains illegal unless sufficient reasons are provided to the landlord, meaning the threshold is set relatively high. Boverket (2011) find that in the period 2008-2011, the size of the second-hand sector increased by 45%. Figure 1 illustrates why this has occurred.
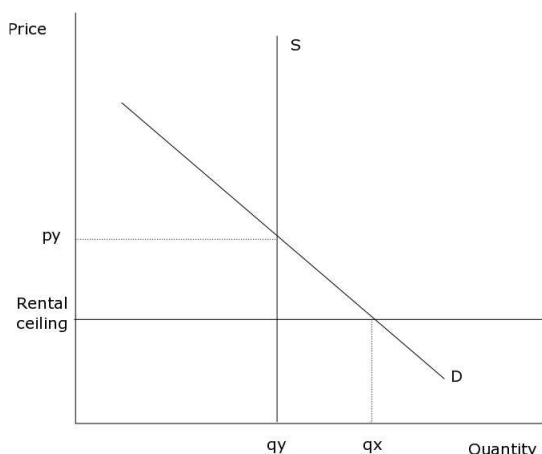
Figure 1 clearly indicates that owing to the rental ceiling, and the fixed, completely inelastic level of supply, in the short run, there will be a shortage of housing equal to the difference between q_y and q_x, rather than equilibrium at a higher price, p_y. Indeed, this may also hold in the medium and long run, depending on the extent of shifts of the supply curve, which have proven to be insufficient to curb the housing shortage in recent years (SCB 2018, Bostadsförmedlingen 2016). The increasing length of the housing queue, as well as continually rising demand, is an effect of this.

Figure 1: The impact of a rental ceiling on the rental market.

The composition of the rental market can have negative impacts on marginalized migrants who cannot afford access to the second-hand

market (Socialstyrelsen 2010), but who have been unable to stand in the queue as well. A common solution has been to provide refugees with housing, normally through the rental market, though sometimes also through municipality-owned private housing cooperatives. This, in turn, can create social tension as some groups appear to be favoured by the government in being allowed to effectively 'skip' the rental queue, which could be the only way to effectively "break through the housing career ladder'' (Magnusson Turner and Hedman 2014; p.3). Indeed, in many municipalities, an informal separate housing queue for migrants has been introduced, with municipalities being required to provide housing to migrants, and doing this by reallocating rental housing from the rental queue, or purchasing properties on the free housing market and using them for migrant housing (Bostadsförmedlingen 2016). Such decisions can serve to frustrate relationships between natives and migrants, and potentially risk increased social exclusion of some previous migrant groups as well as some natives (Costello 2009). Equally, though, they could assist in reducing segregation in the long-run, which over 90 percent of Swedish natives do view "as a problem'' (Andersson et al 2017; p.5). Indeed, past research has found that though migrants normally move up the housing ladder "significantly slower than natives,'' given funds and accessibility, they will behave similarly to natives (Magnusson Turner and Hedman 2014; p.6), meaning starting higher on the housing career ladder could be beneficial for social equity. As such, it is clear that study of migration and the rental market as well as the rental queue is highly topical, as many issues in terms of housing and integration solutions may stem from it.

3. Data and Methodology

3.1 Initial Analysis

Data pertaining to migration, rental queues, as well as controlled variables has been obtained from USK (2018), SCB (2018) and Bostadsförmedlingen (2016), for 19 Stockholm municipalities, from 2005-2015. Since all data originates from government or public sector sources, the data should be reliable and appropriate for this analysis.

Initially, the model will take the following form:

$$\Delta ln(q)_{k,t} = \alpha + \theta \frac{\Delta foreign-born_{k,t}}{population_{k,t-1}} + \theta \frac{\Delta foreign-born_{k,t-1}}{population_{k,t-2}} + \theta \frac{\Delta internal\ migration_{k,t}}{population_{k,t-1}} +$$
$$\theta \frac{\Delta internal\ migration_{k,t-1}}{population_{k,t-2}} + \beta_1 \Delta \ln(In_{k,t-1}) + \beta_2 \Delta Em_{k,t-1} + \beta_3 \ln(T_k) +$$
$$\beta_4 \ln(B_k) + \beta_5 A_k + \beta_6 \Delta NI_{k,t-1} + \beta_7 NS_{k,t-1} + \beta_8 L_k + \beta_9 MI_k + \sum_{t=2}^{11} \delta_t Y_t + \varepsilon_{k,t}$$

(1)

where $\ln(q)$ is the natural logarithm of house prices at location k (municipality), and time t (year), Δ *foreign-born* is the change in the number of foreign-born, *In* is real income (kr), *Em* is the employment rate (employment per 10,000 residents), *T* is temperature average from 1961-1990 in degrees C, *B* is % of population with a bachelors degree in 1984 per 10,000 inhabitants, *A* is the percentage of the population aged 25-34 in 1984, *NI* is the natural population growth per 10,000 residents, *NS* is the new housing stock that becomes available in every year per 1,000 residents (a supply-side variable), *L* is a dummy variable allowing me to account for the differing impacts of new Planning and Building Legislation that took effect in 2011 (another supply-side variable), MI is the interaction effect between the change in income and change in employment, *Y* is years from 2005 to 2015, $t=2,…,11$, M is neighbourhoods, $k=2,…,28$, ε is the error term.

Many papers in this field, including Saiz (2007) and Tyrcha and Abreu (2019), have made use of the shift-share instrumental variable approach in order to limit the impacts of endogeneity. The approach taken is the following:

$$\Delta foreign - born_{kt} = \Delta foreign - born_{Sweden,t,o} * \frac{foreign-born_{k,1984}}{foreign-born_{Sweden,1984}} \tag{2}$$

$$\Delta foreign - born_{k,t-1} = \Delta foreign - born_{Sweden,t-1,o} * \frac{foreign-born_{k,1984}}{foreign-born_{Sweden,1984}} \tag{3}$$

$$\Delta internal\ migration\ inflow_{kt} = \\ \Delta internal\ migrations_{Sweden,t} * \frac{internal\ migration\ inflow_{k,1984}}{internal\ migrations_{Sweden,1984}} \tag{4}$$

$$\Delta internal\ migration\ inflow_{k,t-1} = \\ \Delta internal\ migrations_{Sweden,t-1} * \frac{internal\ migration\ inflow_{k,1984}}{internal\ migrations_{Sweden,1984}} \tag{5}$$

3.2. Reason for Migration Analysis

Following this, analysis will continue by breaking down the foreign-born variable into groups based on reason for migration. This will allow me to discern whether certain migrants have stronger impacts on the length of the rental queue than others. The categories included will be the following:

- All other foreign-born migration (labour migrants, EU migrants, students)
- Family reunification migration
- Refugee migration

3.3. Stockholm Municipality Analysis

Further, analysis will continue, on the neighbourhood level in Stockholm municipality, where migration impacts on the rental queue may be somewhat more direct and more dynamic. Here, 28 neighbourhoods will be analysed, using data from USK (2018) and Bostadsförmedlingen (2016). The equation used will be the following:

$$\Delta \ln(rq)_{k,t} = \alpha + \theta \frac{\Delta foreign-born_{k,t}}{population_{k,t-1}} + \theta \frac{\Delta foreign-born_{k,t-1}}{population_{k,t-2}} + \theta \frac{\Delta Stockholm\ migration_{k,t}}{population_{k,t-1}} + \\ \theta \frac{\Delta Stockholm\ migration_{k,t-1}}{population_{k,t-2}} + \theta \frac{\Delta Rest\ of\ Sweden\ migration_{k,t}}{population_{k,t-1}} + \theta \frac{\Delta Rest\ of\ Sweden\ migration_{k,t-1}}{population_{k,t-2}} + \\ \beta_1 \Delta \ln(In_{k,t-1}) + \beta_2 \Delta Em_{k,t-1} + \beta_3 Pl_k + \beta_4 \Delta NI_{k,t-1} + \beta_5 NRS_{k,t-1} + \beta_6 \Delta CL_k + \beta_7 \Delta L_k + \\ \beta_8 \Delta MP_k + \beta_9 MI_k + \sum_{t=2}^{11} \delta_t Y_t + \varepsilon_{k,t} \tag{6}$$

where notation is as previously, and Stockholm migration refers to migrations originating from within Stockholm municipality, Rest of Sweden migration refers to migrations originating from outside Stockholm municipality, Pl is a political variable referring to the % of people who voted for the Moderate party (right-wing conservative) in the general election in 2018, NRS is new rental stock per 1,000 inhabitants, CL is the change in the number of completed lets/1000, Y is years from 2005 to 2015, $t=2,\ldots,11$, M is neighbourhoods, $k=2,\ldots,28$, ε is the error term.

Regrettably, the regression cannot be broken down further by origin owing to data availability issues.

4. Results

Table I shows the results of the first regression.

Table I: Rental Queue Results

	OLS	IV
ΔForeign-born$_t$/Population$_{t-1}$	0.733***	0.789***
	(0.216)	(0.234)
ΔForeign-born$_{t-1}$/Population$_{t-2}$	0.971**	1.032**
	(0.458)	(0.497)
ΔInternal migration$_t$/Population$_{t-1}$	0.332	0.385
	(0.285)	(0.312)
ΔInternal migration$_{t-1}$/Population$_{t-2}$	0.426*	0.458*
	(0.275)	(0.282)
ΔLog income$_{t-1}$	2.325***	2.564***
	(0.761)	(0.844)
ΔEmployment$_{t-1}$	-0.134	-0.186
	(0.199)	(0.225)
Log January temperature	-0.090**	-0.094**
	(0.044)	(0.047)
Bachelor's degree (%, 1984)	-0.822**	-0.901**
	(0.286)	(0.312)
Working age (%, 1984)	0.150**	0.166**
	(0.064)	(0.069)
Natural population growth$_{t-1}$	-0.038	-0.039
	(0.032)	(0.032)
New stock$_{t-1}$	0.022	0.013
	(0.056)	(0.052)
Legislation	-0.011	-0.015
	(0.022)	(0.025)
(ΔForeign-born$_{t-1}$/ΔPopulation$_{t-2}$)* ΔLog income$_{t-1}$	0.934	1.042
	(1.379)	(1.401)
Year fixed effects	Yes	Yes
Observations	190	190
R-Squared	0.332	0.334

Table I shows that there are positive effects associated with both foreign-born and internal migration, and the size of the rental queue. Foreign-born migration produces coefficients of 0.733 and 0.971, significant at the 1% and 5% levels when not lagged and lagged one year respectively, while internal migration produces coefficients of 0.332 and 0.426, though only the latter, lagged one year, is significant at the 10% level. This appears to indicate that foreign-born migration has a substantially stronger impact on the length of the rental queue than internal migration. Further, I note a significantly strong effect for income, and also a significant effect for the age variable, though interestingly, a negative effect for temperature and the percentage of people with a bachelor's degree. This could be indicative of wider societal trends, and does also suggest that omitted controlled variables could also have an effect on queues.

In terms of the IV analysis, I note broadly consistent results for the migration coefficients, as well as for the control variables for the most part, confirming the strength and robustness of the results, and indicating instances of endogeneity appear to be relatively limited in their extent. Indeed, the coefficients generally appear to not be overly under or overestimated as evidenced by the similar results for the IV when compared to the OLS results.

Moving on from this, in table II I look also at the impacts of individual migrant groups, grouped by origin, in order to determine whether certain migrant groups have an adverse impact on rental queues or not.

Table II: Rental Queue Results by Reason for Migration

	OLS	IV
ΔOther foreign-born migration$_t$/Population$_{t-1}$	0.054	0.206
	(0.953)	(1.305)
ΔOther foreign-born migration$_{t-1}$/Population$_{t-2}$	0.916	0.462
	(1.755)	(2.054)
ΔFamily reunification migration$_t$/Population$_{t-1}$	0.988	1.198
	(1.311)	(1.588)
ΔFamily reunification migration$_{t-1}$/Population$_{t-2}$	0.873	0.711
	(0.955)	(1.153)
ΔRefugee migration$_t$/Population$_{t-1}$	0.734**	0.899**
	(0.304)	(0.363)
ΔRefugee migration$_{t-1}$/Population$_{t-2}$	1.255**	1.306**
	(0.561)	(0.599)
ΔInternal migration$_t$/Population$_{t-1}$	0.411	0.488
	(0.337)	(0.351)
ΔInternal migration$_{t-1}$/Population$_{t-2}$	0.483*	0.517*
	(0.296)	(0.300)
ΔLog income$_{t-1}$	2.566***	2.617***
	(0.860)	(0.868)
ΔEmployment$_{t-1}$	-0.177	-0.204
	(0.251)	(0.317)
Log January temperature	-0.105**	-0.154**
	(0.049)	(0.073)
Bachelor's degree (%, 1984)	-0.979**	-1.160**
	(0.346)	(0.395)
Working age (%, 1984)	0.171**	0.216**
	(0.075)	(0.089)
Natural population growth$_{t-1}$	-0.032	-0.044
	(0.035)	(0.039)
New stock$_{t-1}$	0.046	0.051
	(0.055)	(0.065)
Legislation	-0.014	-0.018
	(0.025)	(0.033)
(ΔForeign-born$_{t-1}$/ΔPopulation$_{t-2}$)* ΔLog income$_{t-1}$	1.215	1.154
	(1.477)	(1.426)
Year fixed effects	Yes	Yes
Observations	190	190
R-Squared	0.334	0.336

Table II shows relatively clearly that certain groups do appear to have a stronger impact on rental queues than others. In particular, I note that only refugee migration and internal migration produce significant impacts, with the former producing stronger impacts of 0.734 and 1.255, significant at the 5% level, compared to the latter's 0.411 and 0.483, with only the latter, lagged one year, significant at the 10% level. Both family reunification and other foreign-born migrants do not significantly impact rental queues, which is perhaps unsurprising given that the latter group is likely to favour other forms of housing where possible owing to their relative wealth and preferences, while the former is less likely to have a direct impact owing to often having the ability to live with family. Nevertheless, this does highlight that although both internal migration and foreign-born migration may impact rental

queues, perhaps it is foreign-born migration which has a stronger impact, as was also suggested in Table I, with refugees having particularly strong impacts. Whether these migrants are directly impacting the queue by joining it, or simply by increasing demand for the type of housing that is offered in the queue, with municipalities potentially even introducing queue jumping mechanisms as a result of their presence, is difficult to state conclusively. However, it is clear that differential impacts of foreign-born migration do appear to manifest with regard to this analysis.

Moving on, I look more closely at the impacts of migration on the rental queue in the Stockholm municipality context, in order to attempt to ascertain whether differential impacts exist on a more localized level. The results are shown in Table III:

Table III: Housing Markets in Stockholm Model Results

	OLS	*IV*
ΔForeign-born$_t$/Population$_{t-1}$	2.133***	2.355***
	(0.801)	(0.851)
ΔForeign-born$_{t-1}$/Population$_{t-2}$	2.464***	2.937***
	(0.853)	(1.071)
ΔStockholm migration$_t$/Population$_{t-1}$	1.590**	1.781**
	(0.699)	(0.833)
ΔStockholm migration$_{t-1}$/Population$_{t-2}$	2.155***	2.508***
	(0.723)	(0.994)
ΔRest of Sweden migration$_t$/Population$_{t-1}$	3.356***	3.854***
	(1.596)	(1.774)
ΔRest of Sweden migration$_{t-1}$/Population$_{t-2}$	3.921***	4.536***
	(1.401)	(1.719)
ΔLog income$_{t-1}$	0.689	1.431
	(2.652)	(3.844)
ΔEmployment$_{t-1}$	0.635***	0.604***
	(0.157)	(0.169)
Politics	0.008	0.132
	(0.102)	(0.159)
Natural population growth$_{t-1}$	-0.279***	-0.242**
	(0.081)	(0.105)
New non-rental stock$_{t-1}$		
New rental stock$_{t-1}$	0.144	0.076
	(0.209)	(0.364)
ΔNumber of completed lets	-0.137**	-0.154**
	(0.060)	(0.069)
ΔAverage number of bids		
ΔAverage time until sale		
Legislation	0.189***	0.205***
	(0.016)	(0.024)
Million Programme	-0.220	-0.154
	(0.506)	(0.450)
(ΔForeign-born$_{t-1}$/Population$_{t-2}$)*ΔLog income$_{t-1}$	1.864	1.399
	(1.177)	(1.800)
Year fixed effects	Yes	Yes
Observations	308	308
R-Squared	0.544	0.545

The results indicate that migrants from the rest of Sweden produce coefficients of 3.356 and 3.921, foreign-born migrants produce coefficients of 2.133 and 2.464, and migrants from

within Stockholm coefficients of 1.590 and 2.155, all significant at the 1% level, except for migrants from within Stockholm when not lagged, which is significant at the 5% level. Though coefficients cannot be compared between this and the previous two dimensions studied in earlier tables, owing to differences in the dependent variable, these findings remain highly interesting. This is because they indicate a departure from previous results, where this time, migrants from the rest of Sweden produce the strongest impacts, while foreign-born migrants produce substantially weaker, but still the second strongest impacts, and Stockholm migrants produce the weakest impacts. Wealth and preferences of Stockholm migrants may mean that rental housing is not the preferred housing solution for some, thus reducing competition stemming from this group. Beyond this, many Stockholm migrants are likely to already be in the housing queue, which for many of the studied districts is likely to be the same queue. Hence, reduced impacts on the housing queue for this group is not entirely surprising.

The fact that migrants from the rest of Sweden produce the strongest impacts is not overly surprising, either. These migrants are likely to be well aware of the housing shortage in the Stockholm market, owing to media reporting as well as general knowledge of Swedish markets, and thus may recognize the importance of joining the rental queue as early as possible. Meanwhile, foreign-born migrants may not be aware that Stockholm (and Sweden) does not have a free rental market before moving, and hence are less likely to appreciate the importance of joining the queue at an early stage. This, coupled with wealthier foreign-born migrants perhaps not needing or wanting to queue for rental housing, means that a diminished impact for foreign-born migrants, similar to that for Stockholm migrants, is not entirely surprising, either.

It is noteworthy, however, that in Tables I and II, internal migration was only very weakly significant, while foreign-born migration was more significant, where as on the localized level in Table III, the opposite holds, with a form of internal migration being most significant, while foreign-born migration is still strongly significant, but less than this form of internal migration. This indicates that all forms of migration can have a strong impact on the rental queue, depending on the scale studied.

5. Conclusions

In conclusion, I note that both foreign-born migration and internal migration have proven to be impactful on the length of the rental queue in Sweden. Foreign-born migration appears to be more impactful on the general level, while in the localized Stockholm context, certain forms of internal migration appear to be more impactful than foreign-born migration. However, only foreign-born migration is consistently impactful across all dimensions. Further research could look into impacts on the rental market in other contexts, particularly where the rental market is uniquely formed by its institutional background or otherwise.

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