MIGRATING IDENTITY

An Identity-Based Club Theory Approach to Immigration and Adaptation

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1. Introduction

Migration is caused by a complex combination of social, political, cultural and economic factors, such as globalization and violent conflicts in various areas in the world. Dealing with this migration heterogeneity and its consequences is one of the most significant challenges of today.

This complexity urges a re-examination of economic theories of migration. Previous research on immigration and integration has rarely addressed the importance of immigrants' social group identities, particularly in regard to their interaction with the citizens and institutions of the countries to which they migrate. Evidence indicate various outcomes from integration processes, however, economic theory is suspected in its update to count for these, say, frictions in integration. Moreover, this neglect in current theory affects measurement and policy-making regarding immigration.

This paper aims at an advanced understanding of immigration and integration in interactive social systems. As 'guest workers' in Europe a half-century ago were not just workers, the refugees who flee their homelands today have many reasons beyond just being 'pushed or pulled' to move. Integration outcomes differ as much as those individuals differ in their migration motivation and social identities. The social group identity concept is be used to re-think the economics of migration in terms of movements of people who have identities thus preferences that are socially constructed, and who are in interaction with others. Matching theory, which has been successfully applied in labor market analyses, is used instrumentally for highlighting how socially embedded persons interact with some social clubs but not the others in the host countries, and how their group memberships in turn reflect on their integration.

The paper proceeds as follows: In section two, the economic approach to migration and adaptation is introduced. The third section discusses frictions in adaptation. These frictions are argued to derive from two main sources: heterogeneity and interactions of immigrants. In the fourth section we propose an alternative matching framework in which heterogeneity and interaction are endogenously taken into account. An identity-based matching between immigrants and social clubs is modeled to explore how frictions could be explained when mechanism is switched from price basis to identities. With this, we propose a shift from an isolated economic integration approach through the market mechanism to an identity-based interactive club theory. The fifth section applies this alternative approach to several issues in economic theory of immigration and integration. Lastly, section six concludes the paper with a discussion on the need of an evolutionary account in addition to this alternative approach, which is, indeed, projective work following this paper.

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2. The Economic Approach to Migration and Integration

Two economic approaches have dominated the literature in immigration theory. The first is the neoclassical approach that takes immigration as a result of wage differentials with a strong link to labor economics and development issues. The second is the human capital approach that emphasizes immigration to be a form of investment in lifetime earnings by the increase in skills. In these two approaches, immigrants migrate for a specific reason and post-migration activities and behaviors are explained in terms o the reason that has driven them to relocate in the first place. Moreover, integration of immigrants has also been understood in terms of labor; therefore based on the market mechanism. Given that the most of the recent research is built on these two fundamental immigration theories, re-examination of the foundations of these theories and refining of their problematic parts are needed.

The decision to migrate to another country might be the result of various push and pull factors. Push factors refer to the motives concerning conditions in the home country. For example, economic and political factors in a country might force people to move to another country that offers relatively better conditions. Pull factors from a potential country to migrate to in turn reinforce the decision. Economic gains and higher standards of living in developed countries together with lenient immigration policies, improved transportation, and communication technologies can offer entrance to a better life to potential migrants especially if they originate from developing and underdeveloped countries.

Although push factors might be certain, pull factors are subject to available information. Persons or families develop expectations from the limited information that they have, and are modelled as making cost-benefit analysis. If their expectations about a new life in destination country surpass the one in their country of origin including predicted migration costs, they may choose to migrate. Particularly positive feedback from networks in the destination country can provide additional powerful motivation. Nevertheless, the anticipation of costs can remain limited; thus the results can be over-estimated.

Once immigration is realized, a new life begins which leads to changes involving multiple dimensions. Some aspects of immigration can be regarded as shocking; however, some of the consequences of the migration process can be anticipated and handled with more ease and fewer complications. With these dramatic adjustments, the immigrants' responses are likely to vary from full adaptation to complete rejection. The crucial factors for the direction of primary responses to this shock are the personality of the immigrant as well as the effects of the origin and host countries. By the time, the shock felt by the transition to the host country and the other relevant variables involved in the process is reduced; a process of adaptation begins for the migrant.

The neoclassical approach to immigration

The neoclassical theory of immigration lies at the center of labor economics (Borjas, 2000a). From a microeconomic perspective, migration is explicitly explained as labor migration in economic development process. John Hicks (1932, p.76) argued that "the differences in net economic advantages chiefly in wages are the main causes of migration." Todaro (1969) extended this idea to explain migration from rural to urban

regions. Since then the main reason for people's mobility has been seen as wage differentials between regions or countries (e.g. Harris and Todaro 1970). The idea is that wage differentials induce immigrants to migrate from low wage to higher wage regions. In turn, this labor flow increases labor supply in the destination country while lowering it the home country, and thus decreases wage differentials. This implies that the migration stops as soon as the wage difference between two countries no longer exceeds the costs of migration, and an equilibrium is reached (Massey et al., 1993)

The neoclassical framework further explains individuals' movement as a result of a rational decision. The decision is made by rational individuals' using cost-and-benefit analysis. If the result is expected to provide them with a higher net return in terms of earnings, they are assumed to migrate. This utility-based approach can be expressed as follows: people move if:

$U(income\ in\ destination - migration\ costs) > U(income\ in\ origin),$ or stay if otherwise (Bansak *et al.*, 2015).

While early theories consider the issue as a single person decision, later the necessity of accounting for the influence of family and friends is introduced as an important factor in the decision process. However, the focus of neoclassical migration theory remains on two things: wage differentials that affect the decision in the pre-migration period and the consequent impacts in the labor market in the post-migration period. Given the beliefs about labor flow and converging to an equilibrium in the market, George Borjas sums the relationship between migration and economic efficiency as follows: "Through an 'invisible hand,' workers who search selfishly for better opportunities accomplish a goal that no one in the economy had in mind: an efficient allocation of resources." (2001).

The human capital approach to immigration

Neoclassical immigration theory is based on the labor economics; therefore the human capital approach that dominates labor economics is also the dominant approach in immigration theory. Human capital is viewed as skills that increase a worker's performance, thus productivity (Acemoglu, 2009).

Gary Becker and Jacob Mincer developed the foundations of human capital theory (e.g. Mincer 1958, Becker 1964). According to them, human capital is similar to physical capital, like machines, as both are means of production in which additional investment leads to additional output. Becker has argued that economic theory is not only about material goods, but rather explains everything about the human society. In his words, "the economic approach provides a framework applicable to all human behavior -to all types of decisions and to persons from all walks of life" (1981, p. ix). As for explaining marriage, family, crime and many concepts, human capital has its own inputs, mostly educational and health, and their increase leads to improvements in productivity capacity. Put in formula, earnings are proportional to human capital: $W_c = r.H_c$. Here, r represents proportionality regarding different cohorts, so that changes by generations who happen to face different conditions affect this proportionality (Becker, 2010). Becker's microeconomic account of human capital is applicable to all human behavior, and is based on the importance of the optimization idea in neoclassical theory. He thus expanded the scope of economics, while the methods he uses were inherited. Based on this, human capital has been extensively

studied in microeconomics about its impact on the macroeconomic variables (e.g. Schultz 1967, Romer 1990).

Larry Sjaastad (1962) introduced the first formal models of human capital to immigration as an investment decision. He pioneered the application of the framework by arguing that migration involves a life-time investment in human capital so that immigrants relocate to where the highest returns to skills are available. Migrants calculate the opportunities that are available to them and subtract migration costs. Rational migrants then choose whatever alternative promises to add to their lifetime earnings more than the others (Sjaastad 1962, Borjas 1990).

As Bodvarsson, Simpson and Sparber (2015, p.11) put it, the present value of the net gain to migration is

$$\pi = \sum_{t=1}^{T} \frac{(W_t^B - W_t^A)}{(1+i)^t} - \sum_{t=1}^{T} \frac{(CL_t^B - CL_t^A)}{(1+i)^t} - C(D,X) \, ,$$

where W_t^A represents the earnings in the place of origin, and W_t^B are the earnings available in the destination; CL_t^A the cost of living in the place of origin and CL_t^B the cost of living in the destination. i denotes discount rate so that the net gain is in terms of present value. Lastly, C is cost of immigration as a function of D, the distance between origin and destination, and all other determinants of migration costs are simply denoted by the vector X.

Integration

Migration involves not just getting somewhere for pre-determined reasons, but also what happens in new environments in terms of adaptation. In economics, adaptation is understood as immigrants' integration into the host country's economy through market transactions (Algan *et al.* 2012), and this economic integration is explained in terms of the earnings of immigrants in comparison to those of natives.

Barry R. Chiswick (1978) proposes a cross-section regression model whereby immigrants gradually acquire knowledge of the language, customs, and nature of labor markets in the host country, and these factors tend to raise their earnings. The analysis of the relative economic performance of immigrants was initially based on the following cross- section regression of the Becker-Mincer model of human capital accumulation (Borjas, 1999):

$$log_w = x\beta_0 + \beta_1 I + \beta_2 y + \varepsilon$$

In the formula, W is the wage rate of a person in the host country and a function of x, a vector of socioeconomic characteristics (i.e. age and education); I is a dummy variable that is 1 if the person is foreign-born and 0 otherwise; and y gives the number of years that immigrant has stayed in the host country. In short, the earnings of immigrants depend on socioeconomic characteristics that shape skills and the number of years spent in the host country.

Studies based on the cross-sectional data have typically indicated β_1 to be negative and β_2 to be positive. That is to say, an immigrant would earn less than a native, yet

over time would acquire more human capital, therefore, economic assimilation would occur and consequently the wage gap between immigrants and natives would be closed to some extent. Borjas (1985) suggested an alternative interpretation of β_2 as a measure of assimilation as it is a coefficient denoting the additional value of one more year of experience in the host country's labor market. In opposition to the previous positive β_2 interpretations, he argued that cross-section data might show a decline in relative skills across successive immigrant cohorts. As this case can indicate a slow economic assimilation rate, it can also be caused by immigrants' unobservable characteristics. If the latter is the case, and the earning gaps of immigrants compared to natives are a result of these different cohort characteristics, then that cannot be identified by statistical analysis. In other words, the cross-sectional data might be useful at first to represent a view of economic integration; however, they might also hide other important effects such as cohort effects, which cannot be shown by statistics without more careful analysis. This cohort effect is about the different characteristics of the different cohorts. So the arguments on the integration in terms of earnings might be easily overstated if certain immigrant cohorts are different from previous ones.

Moreover, other factors are introduced to the cross section model by time. Age at the time of arrival has been seen as another important variable that affects integration. Friedberg (1992) has shown that the immigrants who were children at the time of migration converge more to the profiles of the natives; yet the question of whether this is an economic integration phenomenon or rather a cultural issue calls for further insights.

In sociology, John W. Berry (1997) argues four strategies regarding to immigrant's attachment to both ethnic culture and origin country, and to dominant culture of majority in host country (Fig.1.).

Majority Group

		Strong	Weak
	Strong	Integration	Separation
Minority Group	Weak	Assimilation	Marginalization

Figure 1: Two dimensional model of identity, Berry (1997)

First concept, integration, implies a strong sense of identification to both original and the majority culture. It is achieved when the immigrant combines strong dedication to the origin, at the same time as observing conformity to the host country. The second, assimilation, requires a strong identification with the host country's culture and society, conformity to the prescriptions, but weak identification with ancestry, so the origin. The third, separation, is an exclusive commitment to origin culture, whilst possessing a weak connection to the majority culture from the host country. Lastly, marginalization, involves a weak attachment or strong detachment to both the majority culture and the culture of origin.

In economic analysis of immigration, economic assimilation concept allows to analyze convergence of immigrants' earnings to natives' by skill aspects but not the convergence of attitudes, habits, and behaviors, in other words anything that is not exclusively economic. People are expected to fit into their new environment and follow their reason to migrate that was determined in the first place: earning more. As Chiswick and Borjas' pioneering immigration and integration theory by employing Beckerian-Mincerian human capital view broadly suggests that migrants earn lower then the comparable natives because their existing skills are not perfectly transferable to new labor market. However, when migrants invest in human capital that is rewarded in host countries, their earnings increase and eventually reach those of the natives. When this level of earnings is reached, it is assumed that economic integration is achieved (Zimmermann and Constant, 2011). Berry's strategies cannot be explained with only economic integration idea of this kind since it suggests identification with and attachment to cultures. In this sense the economic approaches can be said to carry individualistic maximization- seeking behavior from immigration to integration where migrants are assumed to be investors in human capital through the change in performance and productivity, and exclude other dimensions of integration.

3. Frictions in Adaptation

Previous section shows that the economic literature tends to predict rational behaviors from immigrants where rationality is described in terms of the consistence of pre-migration reason to migrate and post-migration behaviors in adaptation processes. If the latter is a consistent consequence of the former, immigrants integrate into host societies to which they migrate, and are assumed to start behaving in the way they would have been predicted. This approach suggests that residual behaviors are frictions due to individual differences.

One thing that explains such frictions is migration type. As discussed in the previous chapter, in economics migration studies have primarily focused on labor migration. Therefore emphasis is on the economic theories on wage differentials, factor supply and demand in the labor markets, and the combinations of these and other similar factors. However, these theories can be underestimating and significantly ignoring the roles of other factors that are associated with other types of migration.

Thomas Hammar (1995) argues that not only labor migration and economic factors, but also theories are required to explain family migration, migration for learning, for self-realization, or for the sake of adventure or ethnic, religious, cultural, and racial reasons. Refugee flows must also be included in these attempts. He emphasizes that the distinction between refugees and other type of immigrants be hard to understand. Although pure cases exist, most of the time cases are mixed. And post-migration behaviors are mixed as much as types are mixed.

Let us consider Europe's guest-workers in the 1960s and current refugee flows together. Europe had a guest-workers experience in which significant number of Greeks, Turks, Italians and Yugoslavs migrated to Germany, France, Switzerland, and other Western European countries. The common belief was that microeconomic policies would apply with certain efficiency to these workers. The guest workers were allowed to have residence and labor permits for a certain period. These labor permits

were valid only for certain industries with respect to the receiving countries' post-war reconstruction processes. Receiving states believed that the migration of the guest workers was under their control, and illegal migration was at a stable level and not threatening. Moreover, relatively small numbers of refugees seemed controllable on an ad hoc policy basis (Hammar, 1995).

However, these perspectives have changed. Guest workers were expected to migrate to the receiving countries, contribute to these countries' post-war recovery, work only in accordance to the policies designed for them, and return to their countries when they are no longer needed. Nevertheless, in the end, those workers were not as they had been expected to be. Perhaps the most well-known and statement summarizing the matter was from Swiss author Max Frisch:

<blockquote>"We wanted a labour force, but human beings came!"</blockquote>

Another case is current refugee flows. There has been a gradually increasing refugee flow to Europe over the last few decades. Significantly, the conflict in Syria has caused the largest flow since the Second World War. It is currently called a "refugee crisis", and many debates are ongoing in European politics. Complex political issues aside, we should ask how and why these refugees move, and moreover how will they adapt. As guest workers in Europe a half-century ago were not just workers, the refugees who flee their homelands today cannot be simply understood in terms of a single reason and single way of adaptation into host societies.

I propose that the common problem in these two different movements is the misconception of the subject matter and interactions involved in the adaptation process. The standard explanation of decision-making regarding immigration and adaptation is too simplistic to represent decisions made in a reality that is not simplistic (see for instance Savages small world conception, 1954). People are heterogeneous and do not migrate for a unique, single reason, and thus they don't adapt in the same way either. Although the aggregate picture may show a dominant common reason, the way individuals perceive that reason and make decisions can be driven by a range of different expectations. For a complete understanding of adaptation process in post-migration, therefore, analyses should emphasize heterogeneity and interaction as key issues and the sources of frictions.

Frictions that derive from heterogeneities

In contrast to the idea of homogenous societies, heterogeneity should be understood in terms of how distinct and heterogeneous immigrants are, and how their adaptations differ from those of others consequently. That is to say, frictions associated with heterogeneity have two sub-sources: heterogeneity of individuals in pre-migration process, and heterogeneity in their post-migration behaviors.

Three main factors are used to distinguish immigrants and heterogeneity in their adaptations in economic theory:

The first, *human capital approach,* explains the heterogeneity of individuals with respect to skill level (Bodvarsson et al., 2015). Acemoglu (2009) lists the possible sources of human capital differences as innate ability, schooling, school quality, and training. Most of these are measurable variables; therefore empirical studies

investigate them extensively. Furthermore, because skills affect aggregate parameters, not only the differences between people but cross-country income disparities are seen as results of differences in human capital (e.g. Mankiw, Romer and Well, 1992).

Indeed, human capital differs for immigrants; but human capital differences are not the only explanation of differences between immigrants. An example is given about obtaining a job. In most cases, the probability of obtaining a job in a destination country depends on the skill level, and migrants' investment in destination-specific human capital. This explains the general causality between skills and jobs. However, recent behavioral advancements in economics emphasize many other behavioral elements that are significantly influential in behaviors and that differ for individuals. For instance, Cadena and Keys (2015) examine the role of impatience in human capital formation, which they see as the most important investment decision individuals make during their lifetimes. They find a significant relationship between impatience and human capital investment based on the college drop-out decision. So measurable skills only partly explain obtaining a job, and other factors that have an influence and make individuals distinct from one another.

Costs of migration represent another significant factor that has an influence on the migration decision as well as on migrants' adaptation in different ways. These costs include monetary costs such as travel expenses as well as non-monetary costs (Clark *et al.*, 2007). Indeed, non-monetary costs such as the psychological cost of losing social ties are even more influential than the monetary ones once an immigrant has arrived in a destination country (e.g. Urrutia, 1998), although the former are difficult to observe and identify (Mincer, 1978).

Peter Schaeffer (1995) sees costs as an element of personal characteristics that distinguish immigrants from natives. By distinguishing the particular costs that immigrants cope with, he argues that the degree of integration and relatedly work performance can be understood better. Constant and Zimmermann (2011) add that immigrants evaluate returns and costs of migration differently, and this is because of their personal characteristics that they explain them as age, gender, experience, and schooling.

Another distinguishing factor used in the adaptation literature is *the cohort effect*. Migrants of different cohorts encounter different conditions specific to their cohort, and perform differently. Cohort effects are thus shared characteristics of groups of migrants. This impact is indeed similar to those of other group characteristics. For instance, several studies find that different national groups achieve significantly different economic outcomes in post-migration process (Borjas 1987).

Similar quality issues are examined concerning past and recent migration waves, too. On the one hand, studies find that recent migration flows have faster wage growth (Duleep and Regets, 1997); on the other hand, Borjas (1995) finds no evidence for differences in wage growth. Indeed, migration is not an isolated and individualistic issue. Therefore, migrants of a cohort might be similar simply because they were already a kind of group also in their country of origin. On the other hand, sometimes there is no evidence of a cohort effect on a certain variable, because some cohorts might have different distinguishing variables, and distinguishing variables of the controlled cohorts might lack those that would have an impact on that certain variable. So a cohort may display a significant correlation with certain variables at

one time and may not at another. This is because a cohort is a large group with many factors and different stories that might be at work.

Let us take a success story as an example. Recently a Turkish-American scientist Aziz Sancar was awarded the 2015 Nobel Prize in Chemistry together with Tomas Lindahl and Paul Modrich for mechanistic studies of DNA repair. Since then, in Turkey the debates have been ongoing about the background of his success. He was born in a little village in Eastern Turkey. Yet having been through very hard times in his life, he is now awarded to Nobel. The first impressions from Turkey were about considering this award as an honor for the country. Soon after congratulations turned into a discussion about the reasons for his success. For some people, this was nothing but his own ambition. For others, he was lucky enough to get to the United States so that Western education led him to succeed. A right-wing group even claimed this was about "the power of Turk". The discussion ended with the news of a superior importance in the country.

So, let us ask once more ask what was the source of his success, which may be a friction derived from his distinctness. Indeed, we cannot know perfectly. Most probably it does not come from a single factor, but a composition of several factors. Not everyone's ambition, having a Western education, or being a member of a certain cohort necessarily leads to such success. Nevertheless, the way the factors come together makes a person distinct from others. And these ways could be understood with endogenous heterogeneity over a whole mechanism that concerns all the factors, and with interactions that represent the influence of individuals' links to their environments.

Frictions that derive from Interaction

The second source of frictions in adaptation is the interaction of immigrants. In contrast to isolation, interaction leads interdependence and social-embeddedness of individuals. This interdependence is claimed to reflect on integration outcomes.

In the context of immigration, it is important to study migrants in interaction with their environments and thus be influenced by and influence those surroundings. Given the significant impact of non-market interactions and social networks, immigration should be considered as a social issue rather than individualistic that occurs in isolation. Many economists recognize that beyond market interactions other non-market social and cultural interactions can be significant determinants of migrants' social adaptation (Algan *et al.* 2012).

Interacting migrants exchange both pecuniary and non-pecuniary things. They share pecuniary things; for instance money or other goods before they get settled down as self-sufficient people. They also share non-pecuniary things. Information is one of the most significant examples to the non-pecuniary things that migrants exchange. Other examples are experience, ideas, social networks and so forth. All these exchanges occur through interaction; migrants who interact with each other become interdependent with their environment. So interaction means interdependence of migrants.

In economic theory, interdependence is understood in terms of the interdependence of

preferences. Preferences are analyzed based on utility functions. Therefore, we see interdependence in these functions when utility of a person includes utility of the others. Fisher and Shell (1972) emphasize preference interdependence by introducing consumption of other individuals to the individual utility function. The individual utility then depends on the consumption of others who are in person's reference group.

In immigration literature, interdependence appears in each phase of migration. In Sjaastad's work on pre-migration decision (1962), the unit of analysis is the individual, and this is one of the limitations of his human capital framework (Bodvarsson *et al.*, 2015). The Migration decision unit is not just a person in isolation. Rather, collective decisions are mostly made by families. Therefore, the decision should not be understood whether a single migrant is better off at a destination country, but whether the family as a whole is better off (Mincer, 1978).

In the family migration decision model, Jacob Mincer (1978) studies the migration decision as a two-persons-decision problem. He shows that the income that affects the decision includes both income of first and the second person. The decision is positive or negative depending on the signs of variables for both persons. Borjas (2000) and Bodvarsson *et al.* (2015) re-interpret the Mincer model. In their description, a variable shows the change in income of the first person by migrating, and the other shows of the second. If the sum of the two changes is positive, then migration decision is positive. Let us assume that ΔI_1 is the change in private gains of person-1, and ΔI_2 is the change in private gains of person-2. According to the these models, if

$$\Delta I_1 + \Delta I_2 > 0,$$

then the migration decision is positive.

In the model, the two people are not assumed to move necessarily together. Mincer discusses that migration can be resulted regarding only one person's gain by migration. In this case, a person's gain needs to be covering the loss of the other. That is to say, the sum of the family's gain needs to be positive. So if two persons' private interests have the same sign, then migration decision is made straightforwardly regarding the sign of both interests.

Moreover, migrants do not interact only with ethnic peers but also with natives in destination countries in the post-migration process, and with policies in all phases of migration. Neoclassical perspective models natives as a control group for migrants. Wage differential notion suggests that migrants aim to converge their incomes to those of natives. Put differently, migrants act regarding natives, but natives do not react in turn. Given that migration is a social issue, modeling of natives is not realistic, and reactions by natives remain to be frictions in immigrants' adaptation. However, if we consider all the agents as participants of interaction, studying frictions in interaction mechanism endogenously is essential.

4. A Matching Theory of Adaptation

So far the paper pointed out frictions in adaptation that derive from heterogeneities and interactions. In this section, we suggest a basic model for taking these two sources endogenously in immigrants' post-migration adaptation processes. We use

search and matching theories as tools to model interaction between immigrants and social clubs in host societies.

Search theory suggests that individuals search for and choose an optimal strategy from a set of potential opportunities. Choice should be made as soon as possible for avoiding the time cost in decision problems. Matching theory, on the other hand, refers to matching of agents in a set with agents in another. The basic idea of matching goes back to marriage problem, the matching of individuals in two gender sets to get married. Yet, the theories have been mostly used for labor market analysis. Petrongolo and Pissarides (2001) explain this with the fact that matching function is positively correlated with the existence of frictions in a market and that frictions are important in the labor market than the other markets[2]. In the labor market analysis, the function has a role to model exchange processes in the market by a well-behaved function that sums up the encounters between workers in search of job and firms with vacancy positions (Cahuc, 2008). Then the usefulness of the matching device is about its empirical relevance to capture actual matchings in the market and pointing out the frictions that derive from heterogeneities, information imperfections, and so forth (Petrongolo and Pissarides, 2001).

In our analysis, we take integration as an interactive phenomenon and thus analogous to employment in labor market analyses. To understand unemployment, it is significant to count for frictions in the basis of matching of job seekers and job vacancies. We suggest that to understand various integration strategies and outcomes, frictions in adaptation is explanatory and that these frictions can be explained by the interactions of heterogeneous immigrants and social clubs in the post-migration adaptation processes. In the basis of what individuals search for and how and with whom they interact, logic behind the matching of parties has explanatory power over outcomes that are more inclusive than the price mechanism explanations. For this purpose let us first introduce the two parties in matching: individual immigrants and social clubs.

Who is the individual migrant?

Analyzing interactions require a base motivation behind agents' matching. In our context, we do not explain this motivation in price and wage terms but by social identity preferences of individuals. So what we refer to by saying interaction is social interaction that creates multidimensional consequences from individuals' non-market interactions.

The idea of migrants' socialness and therefore having socially constituted preferences come into conflict with economics' atomistic individual conception. This long-lasted conception assumes individuals as utility maximizers in isolated environments. However economists have begun to recognize that sociocultural factors can explain and predict economic behavior at least as much as prices or incomes (McCain, 1994). Karl Polanyi (1944) more than a half-century ago criticized the atomistic and fictitious Homo economicus conception by separating labor from other human activities and subjecting the individual to the laws of the market. A growing literature

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[2] See for instance the analyses of 2010 Nobel laureates for Economics –Diamond, Mortensen and Pissarides.

shows the impact of culture on economic choices, productivity, and earnings (e.g. Ottaviano and Peri 2006, Bellini *et al.* 2009). So, economic theory is expanding the idea of considering the subject matter as having more than an economic role.

In the context of immigration and integration, we consider heterogeneity, which we proposed to be one of the friction sources in adaptation, in terms of socialness of immigrants. Social aspects are not the mere motivation in most of the immigration cases; however, it is an effective ingredient in post-migration behaviors. The reason is that individuals have multiple wishes, desires, and wants, and this multiplicity refrain individuals from pursuing stable motivations for their lifetime behaviors.

For modeling individuals in a broader aspect than that of economic individual, we recall identity conception. Identity, or who a person is and what makes a person different from others count for the phenomena that economic role alone was not able to. It has been broadly distinguished into personal and social identities as various social sciences affirm. Some examples to social identity categories are ethnicity, cultural identity, gender, profession, and political affiliation. According to social identity theory of Tajfel and Turner (1979), individuals see the world on the basis of social categories and these categories constitute a part of individual's identity. Individuals identify with certain categories and thus evaluate things based on these categories. So identification makes individuals *re-framed* regarding others' identities (Davis, 2014).

In economics, there are a few approaches suggesting that social identity matters for behaviors; and therefore, should be counted in the economic analyses. Akerlof and Kranton incorporate the social identity concept into neoclassical utility function as a motivation for behavior, where identity is a function that depends on the social category that the individual is assigned to, the set of prescriptions given for the social category, on individual's own characteristics, and individual's own and others' actions as they correspond to the prescribed behavior (see for instance 2000, 2010). Their study proposes that the deviations from the prescriptions of the chosen category cause disutility for individuals.

In our analysis we don't claim that individuals have identities only as an anxiety-reducing mechanism, but do accept the fact that when individuals see themselves as parts of groups, they derive self-esteem from those group memberships (McDermott 2004). When they identify with certain categories, they become subject to the norms of those categories as reference points for their behaviors. This means their preferences are framed with regard to these categories and norms, therefore, often are socially constructed (Davis, 2005). We refer to such socially constructed preferences as social identity preferences.

For the ease of introducing the main lines of the alternative framework, we consider only ethnic identity, which is one of the social identities a person can hold to different degrees. Algan, Bisin and Verdier (2012) suggest considering this identity as the feeling of belonging that a person has to her ancestral group and having relatively high importance in comparison to other identities. It can be particularly important since it comes at birth or in childhood and it is reinforced by physical characteristics or cultural practices. An immigrant after the immigration occurs may display either relative weakness or strength in her ethnic identity in terms of commitments.

Therefore ethnic identity is a social identity, which requires assigning to ethnic category to some degree, as well as local identity. So, immigrants act according to their identification with certain degrees of ethnic identity and joins clubs of the closest degree with a motivation to be with likes, and conform to the norms of their identified category.

What are social clubs?

We defined individual immigrants with their identifications with social categories. According to Kirman *et al.* (2007), social identity is not an abstract identification with social categories but concrete involvement in corresponding social groups. Individuals choose to participate in social groups that they believe the characteristics would fit to their own the most. Davis, on the other hand, adds that social groups are, then, collections of individuals who coordinate their behaviors and actions (Davis, 2014). So social groups should be understood as concrete categories where individuals assign to with respect to their social identities through interaction with members.

For our interactive integration model based on matching of parties, we consider these social groups as clubs. The reason lies in fundamentals of club theory developed by James Buchanan (1965). The club theory provides a rich framework for collective action in private setting (Sandler, 1997). Different from the social groups, clubs concept makes the emphasis on inclusion and exclusion of members in the presence of a good or service that cannot be obtained somewhere else. Since we consider ethnic identity as a social identity thus an identification that needs to be accepted by the group, we can assume this social identity to be an excludable club good. This view conforms to ethnic relations in host countries regarding the fact that those who are not members of certain ethnic groups cannot have access to some ethnic products or practices.

We can imagine countries or unit of countries like Europe, or social groups in countries as being like clubs. Economic club theory, together with the current debates on immigration flows, asks questions such as what kind of migration should be allowed, given the characteristics of clubs, for an optimal inclusion and exclusion of individuals such that marginal gain and marginal cost of admitting a migrant is equal (Kolb 2008). So, membership condition dictates inclusion and exclusion of new members with respect to a cost-benefit analysis in the club level.

What does joining a club mean?

Immigrants in their integration processes come across various social clubs and interact with them. They join clubs if club characteristics conform to how they identify themselves and joining a club means becoming member of the group for individual immigrants. Membership in social clubs is influential on behaviors (Davis, 2014). When they belong to clubs, they derive their social identity from that of the group to some extend. While standard economic theory assumes individual-level incentives, such social identity linked with group membership has already been a central concept for decision making in other social sciences (Chan and Li, 2006).

In immigration context, then, immigrants' behaviors reflect prescriptions of their ethnic group (Darity *et al*., 2006). That is because, being a part of a group is

important for a person, as McDermot explains it (2004), in that the person derives self-esteem from the group membership.

We employ this membership framework and propose that interaction, when defined in terms of joining clubs, influences individual behaviors and thus integration processes in post-migration. Integration is *a complex interplay of culturation and identification* (Lindo, 2005; p.11), therefore, person gets well-being and happiness from the fitness of her character and that of groups (Rorty, 1976), and to be precise in integration context, when accepted in clubs by conforming particular norms of those clubs.

Intermarriages, interethnic friendship, interethnic relations at work place, encounters in the neighborhood can be given example of interactions that have impact on integration outcomes. Particularly intermarriages is used as a significant indicator of interaction (Muttarak, 2013), and as to analyze its impact on integration (eg. Safi, 2008). We don't limit our analysis to marriage, but consider marriage mating as of a known matching example.

Basic Matching Model

Let us first assume a one-to-one matching, which is the marriage model known as Gale and Shapley Algorithm (1962). In their model each man and each woman strictly rank the members of opposite sex with respect to whom they would like to be married. One side proposes to marry; the other accepts or rejects the proposal. The algorithm stops when everyone is matched up with the best available option. Gale-Shapley shows that there is always a stable marriage allocation. Another matching algorithm by Gale and Shapley is the college admissions model, which is a many-to-one model in which each student enters only one college; however, colleges accept students up to a certain point where their quota is fulfilled.

For us, there are two sets M and C: $M = \{m_1, m_2, \ldots, m_n\}$ is the set of immigrants, and $C = \{c_1, c_2, \ldots, c_p\}$ is the set of clubs. Each immigrant has preferences over the clubs, and each club has preferences over the immigrants. Preferences of each immigrant and club will be represented by $P = \{\ldots\}$, a list of ranked social identity preferences. A matching μ is an event of an immigrant's joining one of the clubs in set C. Motivation for joining clubs is only one variable which is ethnic identity represented in degrees. So each immigrant matches up with one club that approaches the most to her ethnic identity.

Let us see this logic with the following example:

There are three ethnic identity levels represented in degrees as follows: $e_1 > e_2 > e_3$

Preferences of immigrants the set of $M = \{m_1, m_2, m_3, m_4\}$ and clubs in the set of $C = \{c_1, c_2\}$ can be represented with respect to their ethnic identity degrees as follows:

$$P(c_1 = f\{e_3\}) = (m_3, m_4, c_1), (m_1, m_2)$$

$$P(c_2 = f\{e_2\}) = (m_2, c_2), (m_3, m_4), m_1$$

$$P(m_1 = f\{e_1\}) = m_1, c_2, c_1$$

$$P(m_2 = f\{e_2\}) = (c_2, m_2), c_1$$

$$P(m_3 = f\{e_3\}) = (c_1, m_3), c_2$$

$$P(m_4 = f\{e_3\}) = (c_1, m_4), c_2$$

In this setting, immigrant m_1 who has e_1 degree of ethnic identity prefers being alone to joining c_2 because there is no any club of e_1 level of ethnicity, and joining c_2 to joining c_1 since e_2 level is closer to e_1 than e_3 given $e_1 > e_2 > e_3$. The same logic applies to other immigrants and clubs. With respect to their own ethnic identity degrees, they rank their preferences to match with agents of the other set. Note that because our aim to this matching model is only to introduce the logic behind when the parties are immigrants and ethnic clubs, introducing preferences in conflict is not necessary. As a result of the above strict preference rankings, a set of matches' pairs is:

$$\mu = \begin{array}{ccc} c_1 & c_2 & m_1 \\ m_3, m_4 & m_2 & m_1 \end{array}$$

The mate of x is denoted by $\mu(x)$. So the matching above has the following pairs: $\mu(m_1) = m_1$ (itself alone), $\mu(m_2) = c_2$, $\mu(m_3) = c_1$, $\mu(m_4) = c_1$. In this setting agents are assumed to match only regarding ethnic identities and to care about their own matches and be not concerned with the mates of other agents (Roth and Sotomayor, 1990).

5. Implications of Matching Frictions in terms of Adaptation

The basic matching idea given in the previous section provides a simple outline for taking frictions in adaptations into account. In this section we discuss further implications that take off from this point.

a. The Need for Multivariate Matching Model

In the basic model we proposed only ethnic identity. However decision makers often face choice sets with multiple variables and with complex alternatives. "Things are often more complicated, (…), because in many settings people identify with more than one social group, for example, by race, class, religion, and gender." (Davis, 2014). This means that we cannot describe immigrants only regarding ethnic identities but with collections of various social identities. Identification with multiple social categories indicates multiple club memberships. The relationship between social identities need to be clarified because in most of the cases they can conflict each other, and this leads conflict for immigrant in decision over joining social clubs. Having said, a matching model where immigrants and clubs that both possess multiple social identities is needed ranking-based social identity preferences.

b. Role of Implicit Social Identity Preferences

Once multiple social identities are ranked in objective functions, it is important to analyze relationships between these social identities. Because having a social identity in preference ranking may reflect on matching with respect to another social identity. As Borjas argues for labor economics, "(…) Employers, workers, and customers use race, gender and any other relevant traits to fill in information gaps about participants in the marketplace" (2000, p. 342).

In the marriage matching model, once matching is settled in a stable manner, individuals in the preference rankings are assumed to be ineffective. In other words, once person A is matched with person B, doesn't matter who was the person after B in the preference ranking of A. However when preferences are in terms of social identities, alternatives in the ranking cannot be assumed to disappear, because a person cannot be only one type but a collection of types. So as in our basic matching model, immigrants possess certain degrees of ethnic identities; they have also other identifications such as gender, political affiliation, or music taste. Though matching is with respect to ethnic identity, these social identities might influence matching strategy.

c. The Role Direction of Proposal to Match Plays

Whether the immigrant or the club proposes to match affect which social identity in the preferences rankings is taken to be base for matching. For instance, an immigrant who identifies with women more than she identifies with her ethnic enclaves can still join an ethnic enclaves club only because the club proposed her first though the club does not identify with any specific gender. Here we can refer to the menu dependence concept in microeconomics. For instance, in the above example migrant m_1 had e_1 ethnic identity and because there was no any club with exactly same ethnic identity degree, she preferred to be alone and not join to the clubs c_2, c_1 as can be seen in the below preference ranking of immigrant m_1:

$$P(m_1 = f\{e_1\}) = m_1, c_2, c_1$$

But menu dependence would suggest she could join c_2 that has e_2 level only because c_3 has even more different level of ethnic identity, which is e_3 remembering that $e_1 > e_2 > e_3$. This shows how a migrant who identifies with strong ethnic identity can join to a club with the weaker in the absence of her ideal club if the club c_2 proposed her first. This example of joining a club with weaker ethnic identity reflects more integration than what would otherwise happen: her *separation* if the club c_2 didn't propose to include her. So as a bias for immigrant's joining in clubs, she integrates more than she separates in one-time analysis.

d. Loss Aversion in Preferences and Sticky Clubs

This last implication discusses what happens once an immigrant joins a club from the perspective of loss aversion in preferences and *sticky clubs*. Loss aversion concept suggests that losses hurt more than gains. Since joining to a club means owning a membership, immigrants are expected to refrain from leaving the club that they matched and trying to enter a new one. We can call this *stickiness of clubs*. In the case

of ethnic identity-based matching, if an immigrant is affiliated to a club, which has strong ethnicity, loosing club membership tends to dominate changing club, which would have had, for instance, weaker ethnicity. In this sense, loss aversion in terms of social identity preferences is explanatory for immigrants' separation or marginalization in host countries.

6. Conclusive Discussion and Programmatic Remarks

In this paper, we surveyed immigration and integration conceptions in economic theory and pointed out frictions that result from heterogeneity and interaction. We suggested counting for such frictions in integration studies endogenously by using matching theory that has been fruitfully applied in labor market analysis. Not denying the importance of frictions for labor market, we tried to carry the attention to the frictions in adaptation, especially in an era in which millions of people move around. With a very basic matching model, we explained the parties of matching as immigrants and social clubs, and how this consideration can help modeling such complex issues.

Yet, there is much more than is done. As discussed in the implications part, the complexity of the adaptation phenomenon requires more advanced analysis. Given the fundamentals of neoclassical economic theory, interactions and social identity preferences call for innovative modeling ideas that can be implemented in the real life. We also are aware that the analysis in this study mostly draws from the perspective of immigrants. Only in this, matching in the presence of multiple social identities need to be examined in especially its link to personal identity concept, which can offer an organizing mechanism over social identities. In addition to this, identity formation becomes a part of to-do list. Once immigrants' perspective is understood within an identity mechanism rather than a market one, analysis should head to a two-ways integration conception. As Kirman et al. (2007) have argued, social groups do not remain unchanged when new members are admitted; instead, they change as their members change. This suggests that if we consider a society as being like a club, then, what happens in the club is not necessarily static. So matching of individuals and clubs help modeling interactions in social systems, yet, these matchings need to be based on continual feedback relationships where both immigrants and clubs keep evolving since their social identity preferences would not remain stable due to the new entrants and influential interactions.

As of last words, behavioral economics within an evolutionary framework would help understanding who the individuals are, how they interact, and that consequently evolve. Immigration and integration topics would benefit these innovations by all means.

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