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Internal Borders: Ethnic-Based Market Segmentation in Malawi

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Summary. — Ethnic diversity is associated with poorer economic development, but why? I argue that market segmentation is one mechanism linking diversity to economic underdevelopment: when ethnic groups are geographically segregated and trust is concentrated within groups, markets will tend to be segmented along ethnic lines. I evaluate this argument using maize price data from seventy Malawian markets over 14 years and combine it with census data on the spatial distribution of ethnic groups. I find that maize price differences—a key indicator of market segmentation—are indeed larger for ethnically dissimilar markets, even after taking sub-national administrative borders geographic barriers, and climatic differences into account. These statistical findings are complemented by interview data from farmers and traders in three markets across Malawi, which highlight the centrality of trust in small-scale maize trading, as well as a preference for coethnic trading partners. Together, these findings suggest that ethnic diversity, and ethnoregional segregation in particular, can have a negative impact on market integration, an important driver of food security and long-term economic development.

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1. INTRODUCTION

African states are among the poorest in the world, with per capita incomes only half of those in Asia, the next poorest continent, and less than 5% of per capita incomes in North America (Heston, Summers, & Aten, 2012). This underdevelopment translates into real welfare consequences, with Sub-Saharan Africa having the highest rates of malnutrition (Meerman, Carisam, & Thompson, 2012), the most extreme food insecurity (Rosen, Meade, Fuglie, & Rada, 2014), and the lowest human development index (United Nations Development Programme, 2014) of any region. Scholars have long tried to explain why African countries lag behind the rest of the world, even after accounting for many correlates of economic development (Englebert, 2000). A key contender in the race to explain the “Africa dummy” has been the continent’s high levels of ethnic diversity, with Easterly and Levine (1997) famously arguing that such diversity is responsible for “Africa’s growth tragedy.” Subsequent studies have gone on to show that diverse societies do indeed tend to experience slower economic growth than more homogeneous ones (Alesina & Ferrara, 2005; Zak & Knack, 2001).

But *how* does ethnic diversity thwart economic development? Existing explanations tend to focus on elite-level mechanisms, including macroeconomic policy distortions (Easterly & Levine, 1997), the under provision of public goods (Alesina, Baqir, & Easterly, 1999; Alesina & Ferrara, 2005), divergent policy preferences (Lieberman & McClendon, 2012), competitive rent-seeking (Shleifer & Vishny, 1993), and opposition buy-off (Annett, 2001). In contrast, I propose a mechanism linking ethnic diversity to poor economic growth via mass-level behavior. In particular, I argue that ethnic segregation and ethnic based trust reduce interethnic trading, ultimately producing segmentation of agricultural markets along ethnic lines.

In most African states, high degrees of ethnic diversity at the county level belie local level homogeneity, with most states comprising an amalgamation of multiple ethnically homogeneous regions (Alesina & Zhuravskaya, 2011; Matuszeski & Schneider, 2006). While trust tends to be concentrated within ethnic groups in Africa, this is especially so when groups are

geographically segregated (Robinson, 2016b). Given the importance of interpersonal trust for trade in weakly institutionalized settings, individuals tend to engage in trade primarily within sub-national, ethnically homogeneous regions or pay higher transaction costs for trading across ethnic lines. As a result, diverse, segregated countries will fail to establish national market integration, resulting in slower growth (Fafchamps, 1992) and reduced food security (Sanogo & Amadou, 2010). In short, if ethnic differences pose intra-national barriers to trade, then ethnically diverse states will suffer market inefficiencies and poor development outcomes.

I evaluate the impact of ethnic differences on market segmentation in the context of Malawi, an ethnically diverse country in southern Africa. Past research has shown that Malawian markets are poorly integrated (Fafchamps, Gabre-Madhin, & Minten, 2005; Goletti & Babu, 1994; Nyongo, 2014; Zant, 2012), and qualitative and survey data both suggest that a major barrier to greater market integration is a lack of trust among traders and farmers (Fafchamps & Gabre-Madhin, 2006; Jayne, Mangisoni, Sitko, & Ricker-Gilbert, 2010). I add to this literature by arguing that patterns of market segmentation in Malawi are due, at least in part, to the spatial distribution of ethnic groups within the country.

To evaluate whether or not regional ethnic segregation explains the way in which markets are segmented within Malawi, I combine fourteen years of monthly maize prices from across seventy markets with fine-grained census data on the spatial distribution of ethnic groups. Maize price

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differentials between pairs of markets—a standard measure of market segmentation—are estimated as a function of the degree of ethnic difference between the two markets, while controlling for the physical distance between them. The results demonstrate that ethnic differences are indeed a barrier to trade: market pairs with no ethnic overlap are segmented to the same degree, on average, as ethnically identical markets separated by an additional 211 km. This effect is robust to controlling for potential omitted variables, including sub-national administrative borders, geographic barriers, and climatic differences, all of which could be correlated with both ethnic geography and market segmentation. In addition, by taking advantage of variation across ethnic groups in Malawi, I show that the degree of cultural distance between members of different ethnic groups are consequential for market segmentation, while ethnic divides emphasized in national-level politics are not.

To address the problem of inferring individual behavioral patterns from aggregated price data, I supplement these statistical findings with interview data from farmers and traders across three Malawian markets situated near three different “ethnic borders.” The resulting qualitative data are consistent with my argument that ethnic based trust contributes to market segmentation by influencing the strategies of individuals. In particular, farmers and traders emphasized the risks inherent to trading maize—especially those related to faulty measurements and price information asymmetries—and the importance of shared ethnicity in bolstering trust in response to such risks.

In sum, the findings of this paper suggest that within-country ethnic diversity, and ethnoregional segregation in particular, has important implications for national market integration. These findings are likely to generalize to other contexts in which ethnic groups are geographically segregated, trust is conditioned on shared ethnicity, and markets rely on informal contract enforcement. Given the ubiquity of these conditions in much of Sub-Saharan Africa, the mechanism proposed here may help account for economic underdevelopment and food insecurity across the continent, as well as offering a link between ethnic diversity and economic growth more broadly.

2. MARKET SEGMENTATION AND DEVELOPMENT

The integration of markets—globally, regionally, and within countries—is crucial for economic development. Integration is conducive to growth by reducing the volatility of prices and by allowing gains from trade based on regional comparative advantages. Intranational integration is also important for food security, as such integration allows for the efficient movement of goods from areas of surplus to areas of deficit (Mutambatsere & Christy, 2008; Sanogo & Amadou, 2010). Thus, barriers to trade, and, as a result, barriers to market integration, are detrimental to development (Frankel & Romer, 1999; Keller & Shiue, 2007).

Market integration has typically been studied using pricing data, the most reliable data available for most markets. Inferring market behavior from price differentials across space, an approach called spatial price analysis, stems from the very definition of a market: the geographic extent to which the same good demands the same price at the same time in all areas (Fackler & Goodwin, 2001). Price equalization, or the Law of One Price (LOP), is achieved through trade, although integration does not necessarily require direct trade between all points within the market, as long as all points within the

integrated market are part of the same trading network. Within such integrated markets, the difference in prices of the same good in two different locations will be, at most, equal to the cost of moving that good from the area with the lower price to the area with the higher price (Fackler & Goodwin, 2001). If the price difference exceeds the cost of transport, then a market inefficiency exists, and some barrier must exist to prohibit the profitable trade of that good. Most prominent studies of market integration have focused on estimating the degree to which international borders pose barriers to trade (e.g., Aker, Klein, O’Connell, & Yang, 2014; Anderson & Wincoop, 2002; Broda & Weinstein, 2008; Engel & Rogers, 1996, 2004; Engel, Rogers, & Wang, 2003; Gopinath, Gourinchas, Hsieh, & Li, 2011; Helliwell, 1997; Nitsch, 2000; Parsley & Wei, 2001).

While *intra*-national market integration has received less scholarly attention, such integration is crucial for development. In addition to the fact that inefficient markets result from market segmentation, there are additional negative implications of market segmentation in developing economies. For agricultural markets in Africa, for example, Fafchamps (1992) argues that greater market integration would facilitate economic growth by shifting small-scale agriculture from subsistence farming to export-oriented crop production. When markets are geographically segmented, the price of agricultural products are volatile and dependent on local conditions. Under such conditions, farmers will protect themselves from volatility in food prices by growing their own food (subsistence farming) instead of investing in the production of cash crops. However, if markets are nationally-integrated, food prices would be significantly more stable, and even small-scale farmers will rationally invest in growing cash crops. In the aggregate, market integration would allow more farmers to shift from subsistence to income-generating farming and agricultural productivity and exports would increase, positively impacting economic growth.

A large literature has focused on understanding why national market integration sometimes fails in developing countries (see Fackler & Goodwin, 2001 for a review), and has identified three main barriers to national market integration: high transport costs due to poor infrastructure, government control of trade and pricing, and the lack of formal contract enforcement, all of which are chronic problems in much of Sub-Saharan Africa. First, in terms of high transport costs, scholars cite the lack of well-maintained road networks and the extreme isolation of many rural markets as culprits in prohibitive transport costs. In Malawi and Madagascar, Fafchamps *et al.* (2005) find that transport costs could be reduced by organizing larger loads, but that the dominance of small-scale trading and the dearth of motorized transport in some areas lead to the inefficient use of low-volume transport.

Second, many African states use, or have used, state-controlled agricultural marketing boards with monopoly buying rights to restrict the private trade of agricultural goods. These policies were ostensibly implemented to protect small-scale farmers from price volatility by guaranteeing a minimum price for their excess harvest, but in practice they often resulted in below-market prices for farmers. As a result, in the 1980s and 1990s, international organizations began tying financial assistance to the implementation of market liberalization policies, which were often part of a larger package of policy reforms collectively referred to as “structural adjustment programs.” There is some empirical evidence that market integration did indeed increase following such liberalization policies in several Africa countries (Badiane & Shively, 1998; Dercon, 1995; Goletti & Babu, 1994).

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