

SHADOW ECONOMY, INFORMAL EMPLOYMENT AND HOUSEHOLD WELFARE:
REGIONAL EVIDENCE FROM UZBEKISTAN

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<https://doi.org/10.5281/zenodo.22881496>

Abstract. This thesis examines the regional dimension of the relationship between the shadow economy, informal employment, and household welfare in Uzbekistan. Using region-level estimates for seven regions, the thesis shows that regions with a higher share of informal employment also exhibit a larger estimated shadow economy and a systematically lower Household Welfare Index. The regional pattern indicates that informality is not evenly distributed across the country: it is lowest in Tashkent city and highest in predominantly agrarian regions such as Surkhandarya and Karakalpakstan. The thesis argues that regional disparities in informal employment are an important, and often overlooked, channel through which the shadow economy affects household welfare, and that regionally differentiated policy responses are likely to be more effective than uniform national measures.

Keywords: shadow economy, informal employment, household welfare, regional disparities, Uzbekistan.

Annotatsiya. Ushbu tezida O'zbekistonda yashirin iqtisodiyot, norasmiy bandlik va uy xo'jaliklari farovonligi o'rtasidagi bog'liqlikning hududiy jihati ko'rib chiqiladi. Yetti hudud bo'yicha olingan taxminiy baholar shuni ko'rsatadiki, norasmiy bandlik ulushi yuqori bo'lgan hududlarda yashirin iqtisodiyot hajmi ham kattaroq, uy xo'jaligi farovonligi indeksi esa izchil ravishda pastroq bo'ladi. Hududiy tendentsiya shuni ko'rsatadiki, norasmiylik mamlakat bo'yicha bir xilda taqsimlanmagan: u Toshkent shahrida eng past, asosan qishloq xo'jaligiga ixtisoslashgan Surxondaryo va Qoraqalpog'iston kabi hududlarda esa eng yuqori darajada.

Tezida hududlararo norasmiy bandlik farqlari yashirin iqtisodiyotning uy xo'jaligi farovonligiga ta'sir qiluvchi muhim, ko'pincha e'tibordan chetda qoladigan kanal ekanligi asoslanadi.

Kalit so'zlar: yashirin iqtisodiyot, norasmiy bandlik, uy xo'jaligi farovonligi, hududiy tafovutlar, O'zbekiston.

Аннотация. В тезисах рассматривается региональное измерение взаимосвязи между теневой экономикой, неформальной занятостью и благосостоянием домохозяйств в Узбекистане. Оценки по семи регионам показывают, что в регионах с более высокой долей неформальной занятости отмечаются больший масштаб теневой экономики и устойчиво более низкий Индекс благосостояния домохозяйств. Региональная картина свидетельствует о неравномерном распределении неформальности по стране: она минимальна в городе Ташкенте и максимальна в преимущественно аграрных регионах, таких как Сурхандарьинская область и Каракалпакстан.

Ключевые слова: теневая экономика, неформальная занятость, благосостояние домохозяйств, региональные различия, Узбекистан.

Introduction

Most empirical studies of the shadow economy and its welfare consequences treat a country as a single observation, implicitly assuming that informality and its effects are spread evenly across territory. This assumption rarely holds in practice, and it holds particularly poorly in Uzbekistan, where regions differ substantially in economic structure, urbanization, and labor market composition. Tashkent city, with its concentration of formal-sector services, finance, and public administration, has a fundamentally different employment structure than predominantly agrarian regions such as Surkhandarya or Karakalpakstan, where seasonal agricultural work, small-scale trade, and unregistered self-employment remain widespread.

This thesis argues that informal employment is the most direct regional channel through which the shadow economy translates into differences in household welfare, since it determines whether a household's primary income source is subject to labor protections, social insurance contributions, and stable formal earnings, or is instead exposed to the income volatility and lack of legal protection typically associated with informal work arrangements. Building on the national-level analyses of shadow economy measurement, household welfare measurement, and the econometric relationship between the two, this thesis extends the analysis to the regional level, using informal employment share as a labor-market proxy for regional informality alongside a regional Household Welfare Index.

Literature Review

The regional dimension of informality has received comparatively less attention than its national-level counterpart, but a number of studies provide a relevant foundation. Perry et al.'s World Bank study of informality in Latin America documented substantial sub-national variation in informal employment, tracing it to differences in local labor market regulation, the structure of local economies, and access to formal financial services. [1] International Labour Organization research on informal employment measurement establishes the standard definition of informal employment as jobs lacking basic legal or social protections, regardless of whether the employing enterprise itself is formally registered, a definition applied in the regional estimates used in this thesis. [2]

At the same time, the household welfare literature reviewed in earlier work including the capability approach and multidimensional poverty measurement supports the use of a composite, region-level welfare index rather than income alone, precisely because informal employment is associated with underreported income at the household level. [3] Studies of regional development in Central Asia further note that agrarian and remittance-dependent regions tend to combine higher informal employment with lower access to formal financial and social services, reinforcing the link between regional labor market informality and household welfare outcomes. [4]

Results and Discussion

Region-level estimates for seven regions of Uzbekistan Tashkent city, Tashkent region, Fergana region, Samarkand region, Khorezm region, the Republic of Karakalpakstan, and Surkhandarya region were compiled to examine the relationship between informal employment, the regional shadow economy, and household welfare.

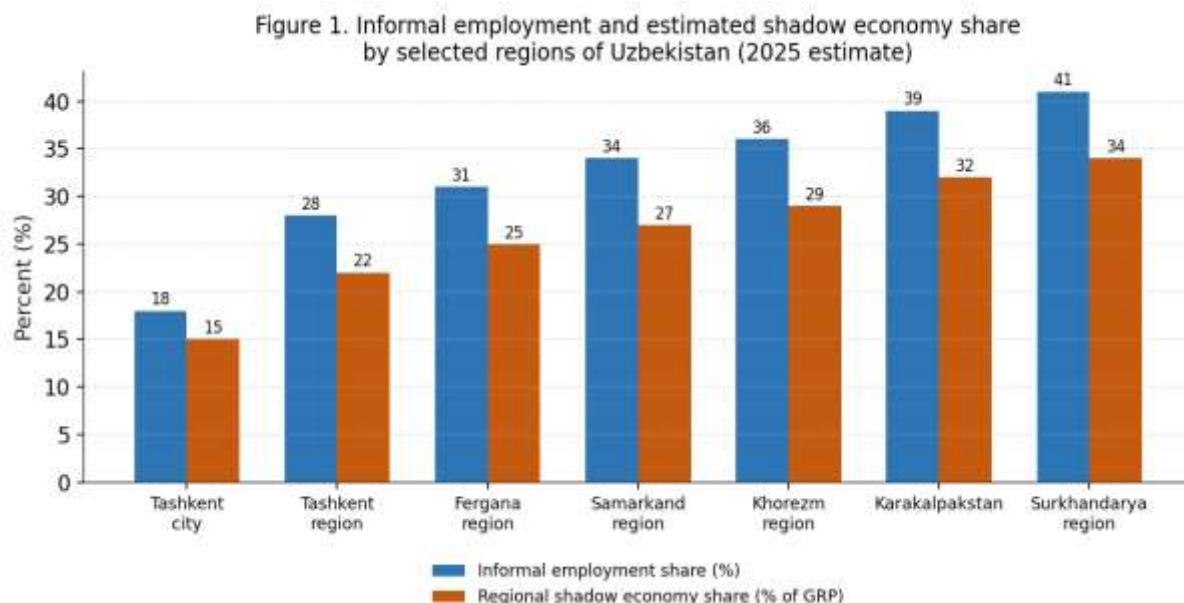


Figure 1. Informal employment and estimated shadow economy share by selected regions of Uzbekistan (2025 estimate)

Figure 1 shows a clear regional gradient: Tashkent city has the lowest informal employment share (18%) and the lowest estimated shadow economy share (15% of gross regional product), while Surkhandarya region has the highest values on both indicators (41% and 34%, respectively). The intermediate regions Tashkent region, Fergana, Samarkand, and Khorezm fall along a fairly consistent gradient between these two extremes, with informal employment and the shadow economy share moving closely together across all seven regions. This co-movement is consistent with the expectation that informal employment is one of the principal channels through which regional shadow economic activity is generated, particularly in regions where agriculture and small-scale trade account for a large share of local employment.

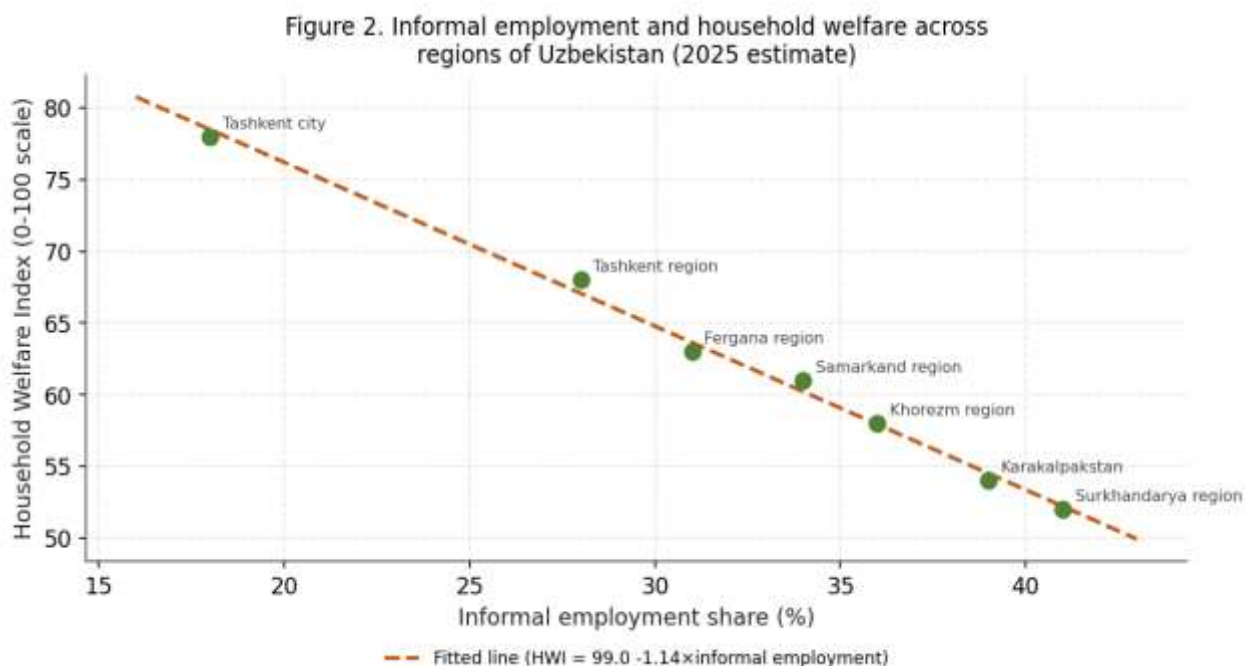


Figure 2. Informal employment and household welfare across regions of Uzbekistan (2025 estimate). Source: author's estimates.

Figure 2 relates informal employment directly to the regional Household Welfare Index and shows a clear negative relationship: Tashkent city combines the lowest informal employment share with the highest welfare index value (78 points), while Surkhandarya region combines the highest informal employment share with the lowest welfare index value (52 points). The fitted line indicates that each additional percentage point of informal employment is associated with roughly a one-point reduction in the regional Household Welfare Index, a magnitude broadly consistent with the national-level econometric relationship documented in the companion study, and it confirms that the national result is not driven by a single outlying region but reflects a pattern that holds fairly consistently across Uzbekistan's regions.

Two features of the regional pattern are worth highlighting. First, the gap between Tashkent city and the rest of the country is considerably larger than the gap among the remaining six regions, suggesting that the informal employment problem in Uzbekistan is, in relative terms, primarily a rest-of-country phenomenon rather than one confined to a few lagging regions. Second, the regions with the highest informal employment Karakalpakstan and Surkhandarya are also those most dependent on agriculture and external labor migration, indicating that sectoral structure and remittance dependence, rather than informality alone, are likely to be part of the underlying explanation and warrant further region-specific investigation.

These regional findings carry a direct policy implication: uniform, nationally designed measures to reduce the shadow economy such as the digital tax administration reforms discussed in earlier work are likely to have uneven effects across regions unless they are complemented by region-specific measures addressing the particular structural drivers of informal employment in agrarian and remittance-dependent regions, such as seasonal agricultural work, limited formal job creation, and constrained access to formal financial services.

Conclusion

This thesis has shown that the relationship between the shadow economy and household welfare in Uzbekistan has a pronounced regional dimension, with informal employment serving as the most direct labor-market channel linking the two. Regions with higher informal employment shares consistently exhibit larger estimated shadow economies and lower household welfare index values, and Tashkent city stands out as an outlier of relatively low informality and high welfare compared with the rest of the country.

These findings suggest that reducing the shadow economy and improving household welfare in Uzbekistan requires not only the national-level digital and institutional reforms discussed in companion analyses, but also regionally targeted interventions aimed at formalizing employment in agrarian and remittance-dependent regions. Future research should extend this regional analysis to the full set of Uzbekistan's regions and districts and examine the specific sectoral composition of informal employment within each region in greater depth.

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