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Gendered Incidence of Indirect Taxation in India's Informal Economy: Evidence from Uttar Pradesh

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ABSTRACT

This paper examines the gendered incidence of indirect taxation in India's informal economy, with a focus on Uttar Pradesh. Using the NSS 68th Round (2011-12) Household Consumer Expenditure Survey and Employment and Unemployment Survey, I estimate effective VAT incidence across twelve fractile classes of monthly per capita expenditure. While the overall incidence appears flat at 1.5-2 % of total expenditure, decomposition reveals important differences. In Uttar Pradesh, poorer households face a larger share of the incidence through essential goods such as milk, pulses, and fuel. Simultaneously, nationally, the richest classes bear a greater share of their burden through durable goods and medical expenses. This distinction is critical because Uttar Pradesh's labour market is marked by high informality: over 80 per cent of rural women and two-thirds of urban women are self-employed or in casual work, with limited access to regular salaried jobs. These employment conditions cluster women's households in lower fractiles, amplifying their exposure to taxes on essentials. Thus, a tax system that appears neutral in aggregate is regressive in welfare terms, imposing a disproportionate burden on women. This critical conclusion calls for rigorous policy implications, inspired by international models that argue for stronger food subsidies, essential goods tax relief, and gender-aware fiscal design.

Keywords: Indirect taxation; Gender; Informal economy; Tax incidence; Regressivity; Fiscal policy; Essentials consumption; Welfare burden

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1. Introduction

When governments rely heavily on indirect consumption taxes (e.g., VAT, excise), the burden of public revenue shifts to households' consumption baskets. Unlike income taxes, such indirect taxes are typically levied at uniform rates and therefore tend to impose a larger percentage burden on poorer households—those who spend a higher share of their limited income on taxed goods (e.g. fuel, food, basic utilities). This phenomenon is well documented in the fiscal incidence literature, which finds that consumption taxes are more likely to be regressive in welfare terms, especially in contexts of inequality and limited progressivity in direct taxes (Buenaventura et al., 2017).

In the developing world, these regressivity concerns are amplified by large informal sectors and gendered labour market structures. Tax systems that do not account for women's differential employment and consumption patterns risk embedding or exacerbating inequality (Joshi et al., 2022). Moreover, indirect taxes often interact with gender dimensions of unpaid care, time constraints, and consumption responsibilities (Grown et al., 2008). Though the academic literature on gender and taxation is growing, rigorous empirical studies in high-informality contexts remain scarce.

In India, indirect taxes have historically dominated revenue mobilisation (Singh, 2019). Simultaneously, India's labour market is characterised by pervasive informality, low female labour force participation, and high gender pay gaps. However, most incidence studies in India have analysed only aggregate distributional effects without sufficiently integrating the gender–informality link. The omission is significant: women are more likely to be in informal or self-employed roles, have lower wages, and are responsible for household consumption decisions. This paper addresses that gap by examining the gendered incidence of indirect taxation in India's informal economy, using Uttar Pradesh as a case study. UP is an ideal focus because it has one of the largest populations, a high prevalence of informal work, contributing 13.83% to the share of informal enterprises in India (as of 2022-23), and low female participation in salaried employment (Magazine, 2024).

Using data from the NSS 68th Round (2011-12**),** both the Household Consumer Expenditure Survey (Schedule 1.0) and the Employment & Unemployment Survey (Schedule 10), I estimate effective VAT incidence across twelve fractile classes of monthly per capita expenditure. I then interpret those incidence estimates through the lens of gendered employment: labour force participation, employment status (self-employment, regular, casual), and the concentration of women in informal roles.

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The central argument is that although the overall effective incidence appears relatively flat (1.5-2 % of expenditure), the composition of that incidence differs: in UP, the poorest classes bear more of the burden through essentials (fuel, pulses, milk), while at the national level, richer classes bear more through durables and medical consumption. Because women in UP are overrepresented in informal, low-paid roles and clustered in lower expenditure fractiles, the welfare burden of this "flat" incidence falls disproportionately on them.

This paper makes three key contributions. First, it integrates gender and informality into the analysis of indirect tax incidence in India, bridging a gap in the existing literature that has essentially treated incidence in aggregate terms. Second, it provides a state-level focus on Uttar Pradesh, a high-population, high-informality context that offers depth and policy relevance beyond the national average. Third, it develops policy insights inspired by international models such as Kenya's zero-rating of staples and South Africa's gender-sensitive VAT reforms that point toward more equitable tax design in India. Together, these contributions demonstrate that a system appearing neutral in percentage terms can have regressive welfare outcomes disproportionately affecting women in the informal economy. The following sections review the relevant theory and empirical evidence, outline the data and methodology, present results on consumption, incidence, and labour market linkage, and discuss policy implications.

2. Literature Review

Taxation in developing economies has long grappled with the trade-off between administrative feasibility and equity. Bird and Das-Gupta (2012) and Tanzi and Zee (2001) note that the shift toward broad-based consumption taxes, such as VAT, was driven by the difficulty of administering progressive income taxes in low-capacity states. While such systems raise revenue efficiently, they are prone to regressivity because poor households spend a larger share of their income on taxed goods and services. Miller and Bird (2012) emphasise that redistribution is typically achieved through expenditures rather than revenues in developing countries, further constraining equity gains.

The regressive risks of indirect taxation are magnified in contexts with large informal sectors. Olken and Singhal (2009) show that even "informal taxation" at the community level burdens the poor disproportionately. Joshi, Prichard, and Heady (2014) argue that while taxing informality may build fiscal legitimacy, its revenue potential is limited and risks exacerbating inequality. Chen (2007) and the ILO (2020) highlight the gendered segmentation of informality: women are concentrated in self-employment, unpaid family work, or casual labour, where earnings are lowest and protection is weakest. Mehrotra and Giri (2023) highlight how India's "missing middle" in enterprise size distribution perpetuates informality, locking workers, especially

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women, into vulnerable employment. Together, these studies suggest that in highly informal economies, consumption-based taxation risks regressivity and amplifies gender inequalities.

These dynamics are evident in India, where both enterprise structures and labour markets reinforce the persistence of informality. Mehrotra and Giri (2023) document the "missing middle" in Indian enterprises, where most employment remains in micro and small firms with low productivity and no social protection. Chen (2007) emphasises that informality is a matter of unregistered enterprises and unprotected employment, disproportionately affecting women clustered in self-employment, unpaid family work, and casual wage labour. The ILO's statistical overview (ILO, 2020) confirms that women across South Asia are more likely than men to be in vulnerable categories of informal work, with lower earnings and weaker bargaining power. Earlier development reports, such as the World Development Report (1988), warned that these structural features limit equitable growth. Taken together, this literature suggests that in Indian states with high informality and low female labour force participation, households headed or sustained by women are more likely to fall into the lower expenditure fractiles, where consumption is dominated by essentials such as fuel, pulses, cereals, and milk. This provides the rationale for focusing on Uttar Pradesh, India's most populous state, which exhibits precisely these features. The following section outlines the data sources, the NSS 68th Round Household Consumer Expenditure and Employment & Unemployment Surveys, that allow us to trace how indirect tax incidence interacts with gendered patterns of informality.

3. Data

3.1 Data Sources

This study draws on three complementary sources of data. The primary dataset is the Household Consumer Expenditure Survey (HCES), Schedule 1.0, from the NSS 68th Round (2011-12), which records household expenditure on food and non-food items over a 30-day reference period. The second dataset is the Employment and Unemployment Survey (EUS), Schedule 10, also from the NSS 68th Round, which provides labour force indicators disaggregated by sex, sector (rural/urban), and employment type (self-employed, regular, casual). Finally, commodity-specific VAT schedules for India and Uttar Pradesh as of 2011-12 were compiled from state government notifications and central tax manuals to assign effective indirect tax rates to expenditure categories. Together, these data allow us to estimate the effective incidence of indirect taxation across consumption fractiles and to interpret that incidence in light of gendered labour market structures.

3.2 Consumption Data

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The NSS 68th Round covered approximately 100,000 households across India, with state-representative samples for rural and urban areas. Uttar Pradesh contributes a large sub-sample, enabling reliable state-level comparisons. The survey was conducted between July 2011 and June 2012, during the VAT regime that preceded the Goods and Services Tax (GST) introduction in 2017.

This paper's analysis relies specifically on Table 6C-R (Rural) and Table 6C-U (Urban) from the published NSS report. These tables report the consumption value (Rs) of broad groups of food and non-food items per person for a 30-day reference period, disaggregated across twelve fractile classes of Monthly Per Capita Expenditure ($MPCE_{MMRP}$)[1]. The focus is on Uttar Pradesh relative to the All-India average, allowing both within-state distributional patterns and cross-state comparisons to be observed. To understand the structure of household budgets, I first examine per capita monthly expenditure on broad groups of goods across fractile classes of $MPCE_{MMRP}$. Figures 1 and 2 show how the composition of consumption in Uttar Pradesh compares with the national average, separately for rural and urban households.

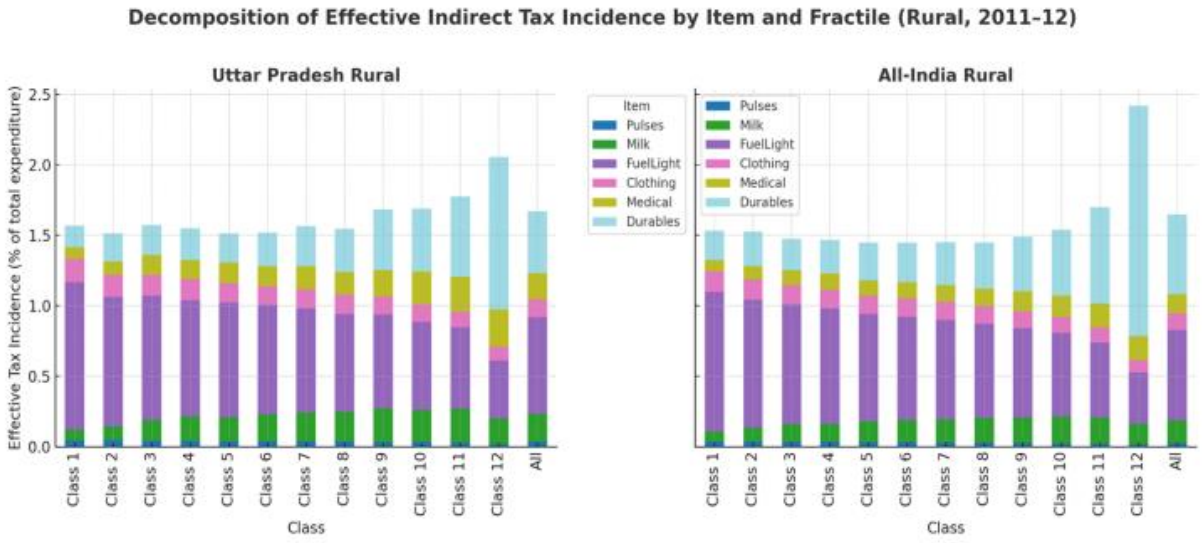

Figure 3.2.1: The figure highlights that UP's rural households allocate a larger share to cereals, fuel, and milk across all classes, while at the national level richer classes diversify sooner into

[1] 1 *The NSS 68th Round reports MPCE using the Mixed Recall Period (MMRP) method, where household consumption of frequently purchased items (e.g., food, fuel, entertainment) is recorded over a 30-day recall, while infrequent purchases (e.g., clothing, footwear, education, durable goods) are captured over a 365-day recall. This approach is widely considered more reliable than a uniform 30-day recall for non-food items, as it reduces recall bias while maintaining comparability across categories.*

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durables and medical expenses. This suggests that the tax burden in UP is likely to remain concentrated on essentials for much of the distribution.

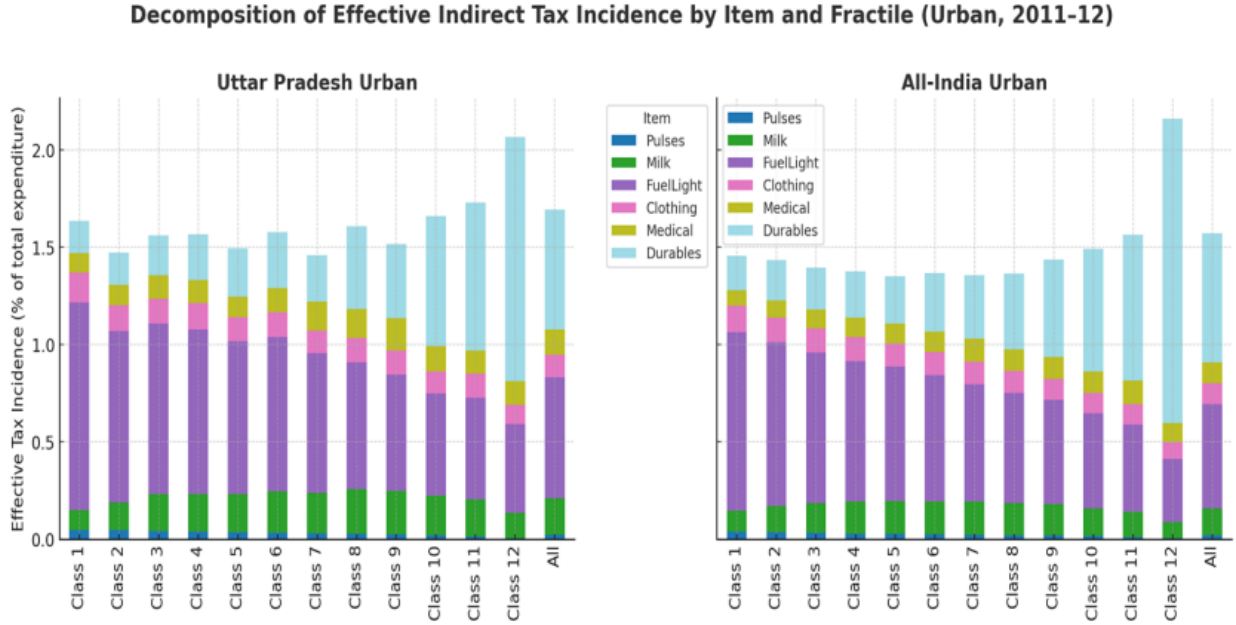

Figure 3.2.2: Even among urban households, UP shows a slower diversification pattern. Essentials continue to dominate, while nationally the top fractiles spend far more on durables and medical. This reinforces the point that UP's households are structurally more exposed to taxation on basic goods.

Employment data from Schedule 10 complement these consumption tables, providing the distribution of workers by status of employment (self-employed, regular salaried, casual labour), disaggregated by sex and by rural/urban sector. This linkage makes it possible to interpret the incidence of indirect taxes in terms of gendered patterns of informality.

3.3 Effective Tax Incidence

Having established how household budgets differ between Uttar Pradesh and the national average, the next step is to translate these consumption patterns into **practical indirect tax burdens**. VAT-era commodity-specific tax rates are applied to the NSS expenditure data to do so. Cereals were exempt from taxes (0%), but durable goods (12.5%), clothing (2%), fuel (8%), pulses (1%), milk (2%), and medical (3%), all had favourable rates. The percentage of total household expenses allocated to indirect taxes is used to determine the incidence for each fractile:

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This measure allows us to see whether incidence is progressive or regressive and what kinds of goods drive the burden at different distribution points. First, we do so for the Rural Households in Uttar Pradesh and contrast them with the rest of the country.

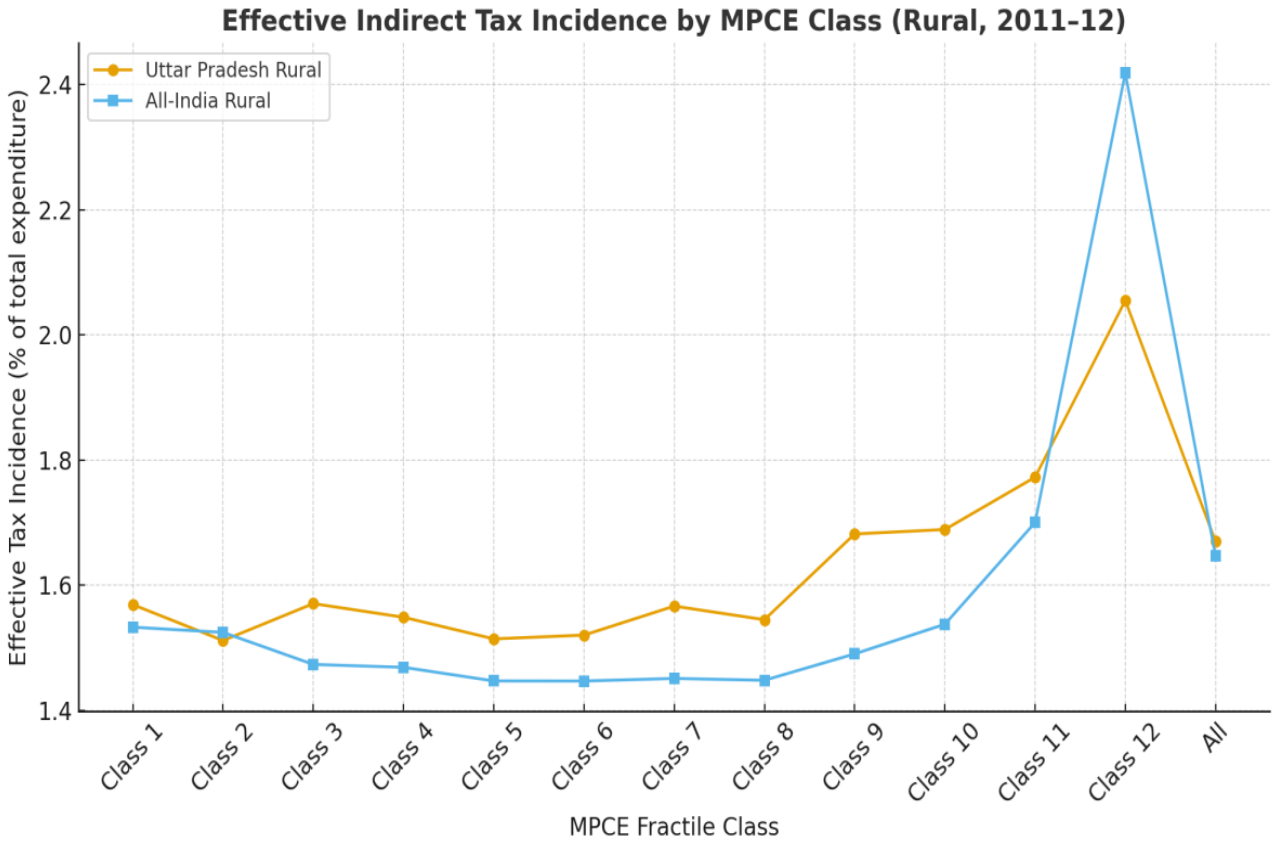

Figure 3.3.1: In rural areas, incidence appears relatively flat across the twelve fractile classes, hovering between 1.5% and 2%. However, Uttar Pradesh's poorest households face a slightly higher incidence than the national rural poor (1.54% vs 1.46%). This difference reflects their heavier reliance on taxed essentials such as fuel and pulses. At the upper end, both UP and All-India converge toward similar levels, though the national rich bear a somewhat larger share of durables and medical spending.

Having examined rural households, where Uttar Pradesh's poor bear a slightly higher incidence than the national average, I move on to the urban sector. A significant contrast is that urban households tend to diversify their consumption more quickly, particularly in durables and medical goods, whereas Uttar Pradesh lags. Effective indirect tax incidence across fractile classes for urban Uttar Pradesh and the all-India urban average are contrasted in Figure 3.3.2.

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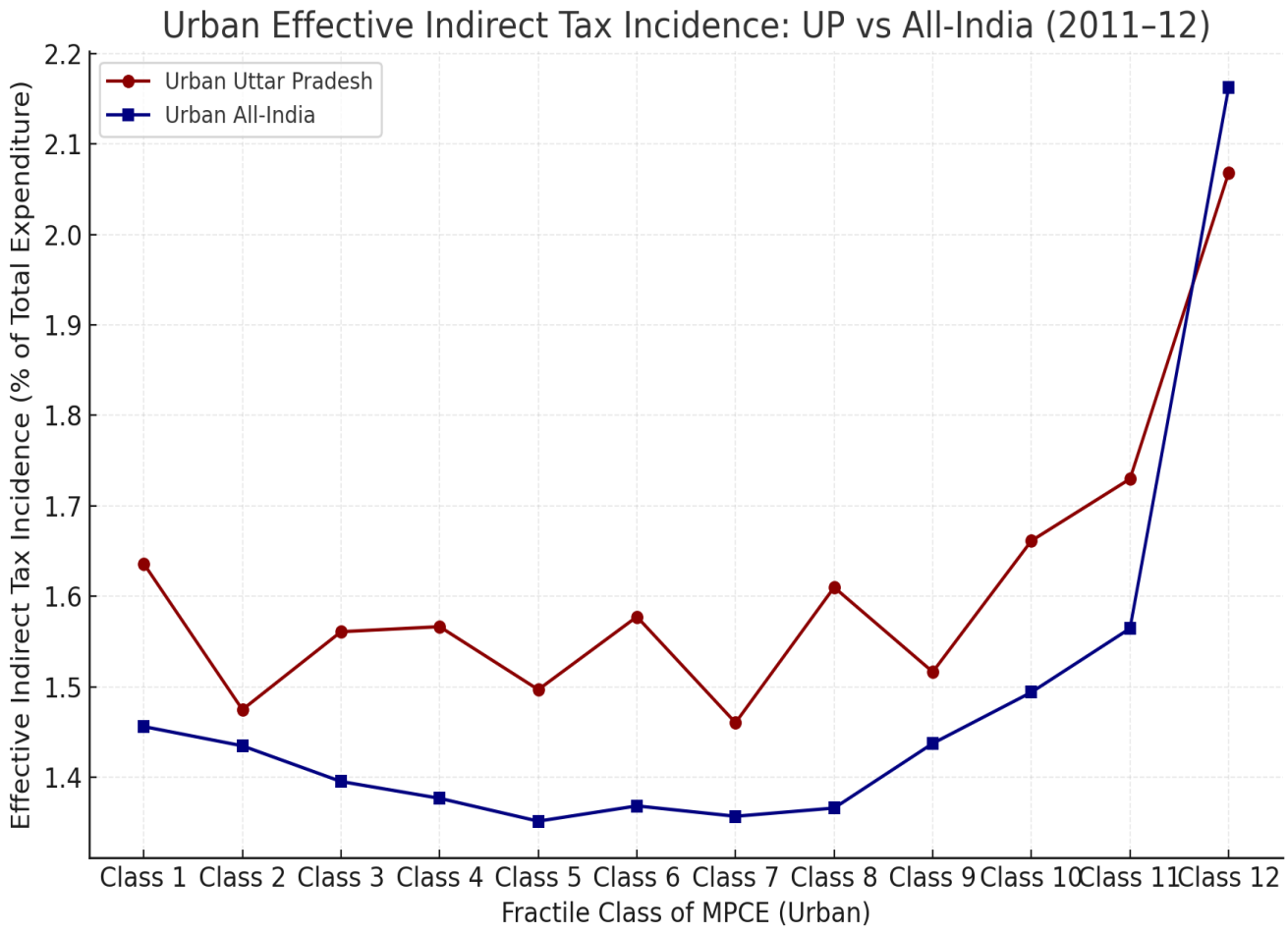

Figure 3.3.2: The urban comparison reveals a sharper divergence. Among the poorest urban classes, the pattern mirrors the rural result: incidence is concentrated on essentials, with UP households showing slightly higher exposure. However, at the top, national households face a noticeably higher incidence (2.34%) compared to UP's richest (2.06%), mainly due to much greater spending on durables and medical goods in urban India overall. This points to UP's slower diversification of consumption, even among the affluent.

Figure 3.3.3 presents the combined effective indirect tax incidence for Uttar Pradesh and the all-India average to bring together the rural and urban results. This view is essential because it reflects the overall distributional pattern of indirect taxation, accounting for the fact that both rural and urban households contribute to the tax base. By merging the two, we can assess whether the flatness of incidence holds across the full population and where Uttar Pradesh diverges from the national benchmark.

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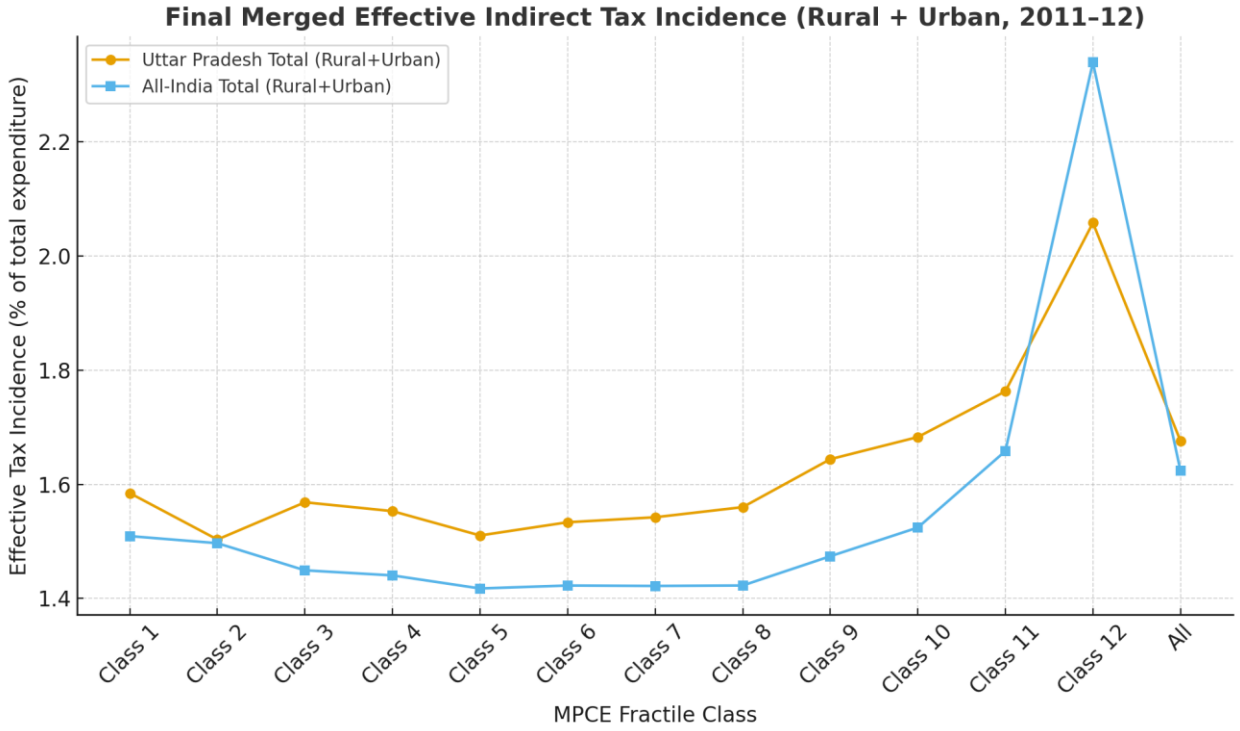

Figure 3.3.3: The combined curve shows that effective incidence remains broadly flat between 1.5 and 2 per cent across the expenditure distribution. However, Uttar Pradesh's poorest households are slightly more exposed (1.54% vs 1.46% nationally), reflecting their dependence on taxed essentials like fuel. At the upper end, the national curve rises more steeply (2.34%) compared to UP (2.06%), since richer households nationally allocate a larger share of spending to durables and medical goods with higher tax rates. This contrast underscores the central point: what appears neutral in aggregate masks important compositional differences, with UP's poor bearing incidence on unavoidable essentials while the national rich face incidence on discretionary goods.

3.4 Labour Market Data

To complement the consumption data, I use the Employment and Unemployment Survey (Schedule 10) of the NSS 68th Round (2011-12), reported in the *Statistical Publication on Employment and Unemployment* (MoSPI, 2014). Specifically, I rely on the table that provides the percentage distribution of workers by usual status (ps+ss) according to employment type: self-employed, regular salaried, and casual labour, which are disaggregated by sex and rural/urban location. Table 3.4.1 compares employment status distribution by sex for Uttar Pradesh and All-India.

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State/ Union Territory	Rural						Urban					
	Self employed		Regular Salaried		Casual Laborer		Self employed		Regular Salaried		Casual Laborer	
	Female	Male	female	Male	Female	Male	Female	Male	Female	Male	Female	Male
Uttar Pradesh	80.7	62.4	3.8	6.7	15.5	30.9	67.5	52.1	21.7	29.9	10.8	18
India	59.3	54.5	5.6	10	35.1	35.5	42.8	41.7	42.8	43.4	14.3	14.9

Source: MoSPI

The results from Table 3.4.1 show that women in UP are far more concentrated in self-employment and casual labour than nationally. In rural UP, over 80% of women are self-employed versus 59% nationally, and only 3.8% are in salaried work. In urban UP, two-thirds of women are self-employed, compared to 43% nationally. This aligns with UP's exceptional dependence on informal work, especially for women.

4. Analytical Linkages

The analysis of consumption and incidence demonstrates that while practical indirect tax burdens appear broadly flat across expenditure classes, their composition differs sharply. In Uttar Pradesh, poor households face an incidence concentrated on essentials such as fuel, cereals, pulses, and milk. In contrast, richer households increasingly face incidence at the national level through durables and medical goods. This distinction alone suggests unequal welfare implications: taxes on essentials are unavoidable, while those on durables can be postponed or substituted.

A critique of household-level incidence studies is that taxes are levied on households as units, not individuals. On its own, this makes it difficult to claim that the incidence is "gendered." However, the gendered dimension emerges when we link incidence to labour market structures and earnings patterns. Evidence from the NSS Employment and Unemployment Survey shows that women in Uttar Pradesh are overwhelmingly concentrated in informal, low-paying, and insecure work—over 80 per cent of rural women and two-thirds of urban women are self-employed or casual labourers, compared to much higher shares of regular salaried work nationally (Chen, 2007; ILO, 2020). These employment conditions directly shape household placement in the expenditure distribution: households that rely on women's earnings are more likely to cluster in the lower MPCE fractiles, where taxed essentials dominate spending.

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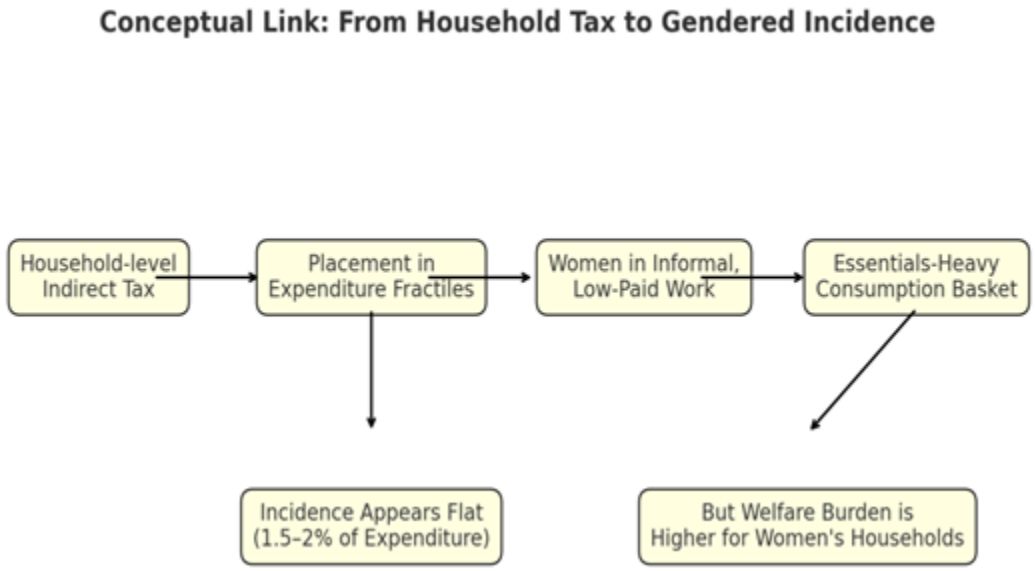

This mechanism is consistent with wider literature on taxation and informality in developing economies. Olken and Singhal (2009) show that informal and local tax systems disproportionately burden poorer households, while Joshi et al. (2014) argue that efforts to tax informality often reinforce existing inequities. Chen (2007) emphasises that informality is gender-segmented, with women crowded into the least protected and lowest-paid activities. Mehrotra and Giri (2023) highlight India's "missing middle" in enterprise size, which traps women in low-productivity work. Taken together, this evidence supports the interpretation that what appears as a neutral household tax burden is gender-differentiated in effect, because women's structural position in the labour market ensures that their households bear a higher share of unavoidable tax on essentials.

Therefore, the gendered incidence here does not reflect the tax code directly discriminating against women, but the intersection of household-level taxation across gendered informality and gendered labour force participation profiles. In Uttar Pradesh, with high informality, low-salaried work, women's participation, and high consumption of necessities, women's households are more vulnerable, and they carry an undue burden. This constitutes the analytical connection to the gendered regressivity we discover: tax neutrality in the aggregates obscures burdens constructed along gender lines and unequally levied.

5. Policy Implications

The results show that what appears as a neutral household tax incidence, flat at 1.5-2 per cent of expenditure, actually conceals a gendered regressivity: households in Uttar Pradesh that rely on women's informal incomes are concentrated in the lowest tiers, where the prevalence is

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disproportionately high for necessities (fuel, cereals, pulses, and milk). Even though the overall tax ratio appears "equal," women's households bear a greater welfare burden because these goods are inelastic. This necessitates policy responses that go beyond aggregate neutrality to address underlying injustices.

First, tailored help for necessities. Evidence from around the world emphasises how crucial selective zero-rating is. Studies reveal that the poorest quintiles, particularly those headed by women, clearly benefited from South Africa's VAT reform, which exempted 19 basic foods. Kenya has also tried to exempt kerosene and maize flour, which are significant expenses for low-income women. The lesson for India is not a complete exemption, but rather the strategic zero-rating of items like milk, kerosene/fuel. It is the pulses most commonly found in women's household consumption baskets.

Second, income-side offsets linked to women. Transfers can counteract regressive indirect taxes, as shown by Conditional Cash Transfer (CCT) programs. To improve household welfare and women's bargaining power, Brazil's Bolsa Família specifically directed transfers to mothers rather than fathers. If indirect taxes disproportionately affect women's households, the offset should likewise be gender-targeted, according to this analytical parallel. This effect could be replicated by piloting cash transfers to women in informal households or strengthening India's Public Distribution System (PDS) with women-registered ration cards.

Third, integrating taxation and labour policy. As Chen (2007) and ILO (2020) emphasise, tax regressivity cannot be separated from labour market structures. In Uttar Pradesh, where over 80 per cent of rural women are self-employed or casual labourers, indirect taxes amplify vulnerability. Childcare subsidies, maternity protections extended to micro-enterprises, and formalisation incentives for female workers would shift women into higher fractiles, reducing exposure to essentials-based incidence.

Finally, institutionalising gender-aware tax design. As the World Bank and IMF increasingly recommend, tax policy should be evaluated for revenue sufficiency and distributional and gender effects. This requires integrating gender-disaggregated household consumption and labour data into tax simulation models, rather than relying solely on aggregate incidence. A gender-aware incidence framework would allow policymakers to see what this paper has shown: that a tax system “neutral” in aggregate can be deeply unequal in outcome.

6. Limitations of this Study and Scope for Future Research

The findings of this paper should be read with several qualifications in mind. First, the analysis is anchored in the NSS 68th Round (2011-12), the last household expenditure survey with sufficient detail to match commodities to tax rates. This places the results firmly in the VAT era;

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since 2017, the shift to the Goods and Services Tax has changed the structure and rates of indirect taxation. While the patterns observed here remain informative, they cannot be assumed to map directly onto the GST regime.

Second, the estimates are constructed at the household level, since taxes are levied on household consumption rather than individuals. The argument for gendered incidence rests on linking these household-level outcomes to labour market structures in which women are disproportionately concentrated in informal, low-paid work. This structural disadvantage places women's households in lower fractiles of expenditure, where the incidence falls on essentials. While this mechanism is consistent with the literature (Chen, 2007; ILO, 2020; Mehrotra & Giri, 2023), it remains an indirect inference: the NSS data do not allow us to observe intra-household allocation of resources or women's individual tax burdens.

Third, the commodity groupings in the published NSS tables impose aggregation. Categories such as "fuel and light" or "medical" contain heterogeneous items with very different tax treatments—kerosene versus petrol, or basic medicines versus hospital care. Applying a uniform VAT rate at the group level may blur these distinctions, leading to some mismeasurement of incidence within classes.

Fourth, the framework used here is static. It captures incidence at a time but cannot account for how households adjust to taxes. Poor families may substitute between goods or increase unpaid labour, such as women collecting fuelwood when kerosene prices rise. These behavioural responses, which carry their own gendered burdens, lie outside the scope of this analysis.

For future work, GST-period expenditure data on households will be essential to reconsider these questions in the current tax architecture. Equally valuable is the addition of time-use surveys and in-household spending modules, through which gendered shifts in unpaid work and decision-making power can be inferred from tax incidence. State-comparison work also would deepen the study, with an example of how public provisioning variations (e.g., health subsidies, PDS efficiency) intersect to intermediate incidence. Finally, linking tax incidence with women's formalisation-based reform frameworks of labour markets would enable a more inclusive evaluation of how gendered economic outcomes are collectively determined across labour and fiscal policies.

7. Conclusion

This paper has examined the gendered incidence of indirect taxation in India's informal economy, focusing on Uttar Pradesh. By combining household consumption data from the NSS 68th Round with VAT-era tax schedules and linking these to employment structures, the analysis shows that what appears as a flat and neutral tax incidence in aggregate is, in fact, regressive in

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welfare terms. Poor households in UP, where women are disproportionately engaged in informal self-employment or casual labour, bear the incidence primarily through essentials such as fuel, pulses, and milk. In contrast, nationally, the richest classes face a larger share of their burden through durables and medical goods. The interaction of gendered labour markets and essentials-heavy consumption patterns thus makes women's households particularly vulnerable to indirect taxation.

These results highlight the importance of moving beyond aggregate incidence ratios to uncover hidden distributional inequities. They also highlight the need for gender-aware tax design that combines consumption-side measures, such as selective zero-rating of essentials and more substantial food subsidies, with income-side supports like conditional transfers to women, along the lines of Bolsa Família. At the same time, the study's scope is limited by using VAT-era data, household-level incidence, and aggregated commodity categories. Future research should revisit these questions in the GST era, with richer data on intra-household dynamics, time use, and coping strategies.

Ultimately, the findings reveal that tax neutrality in the aggregate can mask deep inequalities in outcomes. A gendered perspective on taxation is therefore not an analytical luxury but a policy necessity if India is to design fiscal systems that are equitable as well as efficient.

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Appendix

1. UP Rural and All-India Rural: Consumption value (Rs) of broad groups of food and non-food items per person for a 30-day reference period, disaggregated across twelve fractile classes of Monthly Per Capita Expenditure ($MPCE_{MMRP}$)

Item	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7	Class 8	Class 9	Class 10	Class 11	Class 12	All
cereal	95.08	112.05	112.72	120.52	124.31	128.76	132.28	134.28	138.36	140.3	160.02	166.84	129.85
pulses	22.86	29.49	29.62	34.04	35.82	38.05	40.84	44.98	46.26	50.85	59.11	64.65	40.85
Milk & milk products	18.56	28.62	51.57	68.75	72.99	90.64	106.73	123.26	155.44	182.49	232.73	292.36	113.82
Fuel & light	64.04	69.53	76.39	81.06	88.32	92.96	97.58	100.96	109.88	123.32	142.42	165.33	99.12
Clothing	40.78	46.91	49.96	58.51	59.44	61.55	70.98	79.16	82.62	96.08	108.93	156.18	73.48
Medical	13.41	19.14	32.66	35.81	41.83	45.77	57.23	63.02	82.12	122.48	160.32	285.84	72.05
Durable goods	6.03	9.64	11.72	14.12	14.43	18.32	24.17	28.51	45.31	56.55	89.18	278.18	40.49
Total Expenditure	490.35	605.03	692.8	788.2	867.03	955.23	1053.52	1166.83	1316.24	1579.88	1961.47	3220.57	1156.03

All India	Rural												
Item	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7	Class 8	Class 9	Class 10	Class 11	Class 12	All
cereal	102.96	121.05	132.9	139.62	145.57	148.46	153.51	157.62	166.48	175.9	181.02	212.97	152.91
pulses	21.62	25.68	28.96	32.09	34.32	36.55	39.99	42.07	44.74	49.98	54.05	71.56	39.51
Milk & milk products	17.64	31.72	48.52	57.97	75.47	90.94	103.13	123.62	147.91	191.66	238.65	331.56	114.9
Fuel & light	64.53	75.61	83.19	92.4	96.57	103.74	111.33	119.56	130	148.21	169.4	202.76	114.11
Clothing	38.44	47.97	53.99	60.98	66.81	74.58	83.02	88.86	99.35	116.54	140.96	197.92	85.68
Medical	13.65	21.28	26.7	33.85	36.78	43.68	49.77	58.34	77.42	100.78	144.9	252.91	64.37

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Durable goods	8.68	12.92	13.97	17.45	21.7	25.46	30.81	37.43	51.27	74.63	139.5	586.24	64.64
Total Expenditure	521.44	665.84	783.24	904.57	1017.8	1137.97	1266.08	1426.76	1645.36	2007.46	2556.33	4481.18	1429.96

2. Budget Share for UP households (rural)

Item	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7	Class 8	Class 9	Class 10	Class 11	Class 12	All
Cereals	19.39023147	18.51974282	16.2702079	15.2905354	14.33745084	13.47947615	12.55600273	11.50810315	10.51176077	8.880421298	8.158167089	5.180449424	11.23240746
Pulses	4.661976139	4.874138472	4.275404157	4.318700837	4.131344936	3.983333857	3.87652821	3.854888887	3.514556616	3.218598881	3.013556159	2.007408626	3.533645321
Milk	3.785051494	4.73034395	7.443706697	8.722405481	8.418393827	9.488814212	10.13079961	10.56366394	11.80939646	11.55087728	11.86508078	9.077896149	9.845765248
FuelLight	13.06005914	11.49199213	11.02627021	10.28419183	10.18649874	9.731687656	9.262282633	8.652502935	8.348021637	7.805656126	7.26088087	5.133563313	8.574171951
Clothing	8.316508616	7.753334545	7.211316397	7.423242832	6.855587465	6.443474346	6.737413623	6.78419307	6.276970765	6.081474542	5.553487945	4.849452116	6.35623643
Medical	2.734781279	3.163479497	4.714203233	4.543263131	4.824515876	4.791516179	5.432265168	5.400958152	6.238983772	7.752487531	8.17346174	8.875447514	6.232537218
Durables	1.229733864	1.593309423	1.691685912	1.791423497	1.664302273	1.917862714	2.294213684	2.443372214	3.442381329	3.579385776	4.546590057	8.637601418	3.502500426

3. UP Urban and All-India Urban: Consumption value (Rs) of broad groups of food and non-food items per person for a 30-day reference period, disaggregated across twelve fractile classes of Monthly Per Capita Expenditure ($MPCE_{MMRP}$)

Item	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7	Class 8	Class 9	Class 10	Class 11	Class 12	All
cereal	100.76	123.78	125.21	132.57	142.13	146.47	143.76	151.23	162.97	172.16	195.48	219.37	149.64
pulses	28.03	34.49	36.02	39.45	43.51	44.51	47.79	51.49	60.25	57.1	68.88	71.06	48.14
Milk & milk products	29.99	52.37	82.38	99.15	113.07	141.54	162.41	214.7	250.52	305.62	441.58	582.48	192.29
Fuel & light	78.5	81.01	94.27	107.37	114.31	130.66	139.32	151.59	168.23	196.28	302.93	515.99	159.15
Clothing	45.55	49.21	54.76	68.46	71.3	83.38	89.43	113.5	138.87	169.77	287.19	446.33	120.38

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Medical	19.36	25.63	34.26	40.47	41.09	54.38	77.37	93.19	124.59	128.68	184.43	363.48	89.09
Durable goods	7.76	9.88	14.06	19.01	23.27	30.29	29.62	63.33	68.39	159.27	282.12	907.25	101.14
Total Expenditure	588.09	736.44	860.39	1016.71	1162.97	1319.45	1553.33	1858.31	2250.91	2982.44	4642.04	9037.29	2051.22

Item	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7	Class 8	Class 9	Class 10	Class 11	Class 12	All
cereal	118.42	128.32	140.64	151.48	159.31	166.11	178.59	187.08	197.88	211.16	220.71	224.51	173.82
pulses	28.29	33.18	37.89	40.6	45.46	48.27	52.74	54.94	61.04	64.87	71.1	71.06	50.76
Milk & milk products	37.96	61.83	84.46	111.41	136.71	159.55	185.76	209.15	244.58	277.26	347.87	420.8	184.31
Fuel & light	80.17	95.45	108.24	122.85	140.46	153.1	163.95	180.7	205.58	237.89	298.36	417.79	175.86
Clothing	47.93	56.99	69.6	84.94	97.04	113.17	126.46	144.02	165.83	201.82	280.77	430.4	141.09
Medical	18.69	27.57	36.45	45.52	55.49	64.7	87.38	94.08	114.81	142.94	215.45	341.11	94.27
Durable goods	9.8	14.96	19.11	25.88	31.44	45.64	56.64	79.32	122.55	196.84	320.71	1287.3	139.36
Total Expenditure	700.5	908.92	1118.09	1362.69	1624.86	1887.65	2180.52	2547.94	3062.85	3892.6	5350.06	10281.84	2629.65

4. Budget Share for UP households (urban)

Item	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7	Class 8	Class 9	Class 10	Class 11	Class 12	All
Cereals	0.1713343196	0.1680788659	0.1455270	0.1303911637	0.1222129548	0.1110083747	0.09254955483	0.08138039401	0.07240182859	0.05772454769	0.04211079612	0.02427386971	0.07295170679
Pulses	0.0476627727	0.0468341481	0.0418647	0.0388162485	0.0374283094	0.0337337527	0.03076616044	0.02770797122	0.02676695203	0.01914539773	0.01483830385	0.007862976622	0.02346895994
Milk	0.0509955 9591	0.0711123 7847	0.0957473	0.0975204 3356	0.0972252 0787	0.1072719694	0.1045560184	0.1155350 83	0.1112972087	0.1024731428	0.0951262 8069	0.0644529 4994	0.0937442 1076
FuelLight	0.1334829703	0.1100021726	0.1095666	0.1056053349	0.0982914 4346	0.0990261 0936	0.08969117959	0.08157411842	0.07473866125	0.06581188557	0.06525794694	0.05709565589	0.07758797204

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Clothing	0.07745413117	0.06682146543	0.0636456	0.06733483491	0.06130854622	0.06319299708	0.05757308492	0.06107700007	0.06169504778	0.05692319041	0.06186719632	0.04938759296	0.05868702528
Medical	0.03292013127	0.03480256368	0.0398192	0.03980486078	0.03533195181	0.04121414226	0.04980911976	0.05014771486	0.05535094695	0.04314588055	0.03973037716	0.04022002171	0.04343268884
Durables	0.01319525923	0.01341589267	0.0163414	0.01869756371	0.02000911459	0.02295653492	0.01906871045	0.03407935167	0.03038326721	0.05340258312	0.06077500409	0.1003896079	0.04930724154

5. UP VAT Category

NSS Consumption Group	UP VAT Category (2015 schedule, similar to 2011–12)	Effective VAT/Excise Rate	Notes / Caveats
Cereals (rice, wheat, coarse grains)	Schedule I/II: foodgrains (paddy, rice, wheat, atta, maida, suji, besan, sattu, etc.)	0% (Exempt)	Most staple cereals are exempt.
Pulses	Schedule III: pulses (whole/split)	1%	Explicitly listed at concessional rate.
Milk & milk products	Schedule I (fresh milk, curd, lassi, buttermilk = exempt); Schedule II (milk powder, ghee, paneer, butter = 4%)	Assume 2% effective	Weighted mix: bulk is exempt, processed taxed at 4%.
Edible Oils (not in your final table, but in the All-India version)	Schedule II: edible oils (mustard, groundnut, soybean, sunflower, etc.)	4%	Consistently taxed across states.
Fuel & Light	PDS kerosene = 4%; non-PDS kerosene/diesel/petrol = 12.5–26.8%; LPG domestic = 0%	Assume 8% effective	Mix of subsidised (exempt) and market fuels (taxed).
Clothing	Handloom/khadi = exempt; readymade garments = 4%	Assume 2% effective	Weighted average.
Medical	Drugs & medicines = 4%; life-saving drugs exempt	3% effective	Adjusted for exemptions.
Durables	Schedule V: standard residual rate	12.50%	High VAT for non-essentials.
Total Food	Weighted sum of the above	-	Computed category.

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Total Non-Food	Fuel, clothing, medical, durables, others	-	Computed category.

6. UP Labour Decomposition (E&U Survey NSS)

Social Group	Male						Female					
	Rural			Urban			Rural			Urban		
	LFPR	WPR	PU	LFPR	WPR	PU	LFPR	WPR	PU	LFPR	WPR	PU
ST	434	430	5	436	436	0	124	124	0	90	90	0
SC	512	504	7	526	514	13	209	208	1	121	117	4
OBC	488	485	3	542	518	24	184	184	1	117	114	3
Others	501	494	7	526	503	23	112	110	2	85	81	5

LFPR: Labour Force Participation Rate

WPR: Working Population Ratio

PU: People Unemployed

7. MOSPI (4)- Broad Employment status by State and Sex in Rural and Urban Areas

State/ Union Territory	Rural						Urban					
	Self employed		Regular Salaried		Casual Laborer		Self employed		Regular Salaried		Casual Laborer	
	Female	Male	female	Male	Female	Male	Female	Male	Female	Male	Female	Male
Uttar Pradesh	80.7	62.4	3.8	6.7	15.5	30.9	67.5	52.1	21.7	29.9	10.8	18
India	59.3	54.5	5.6	10	35.1	35.5	42.8	41.7	42.8	43.4	14.3	14.9

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8. Python File for reproducibility

   Google Drive: https://drive.google.com/file/d/1Wsb4T_-EDFkacBB6wQ81nVVar0ujKQR_/view?usp=drive_link

