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Gendered Taxation: IMF Tax Advice and the Unintended Disempowerment of Women

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Case research points to the gendered effects of the value added tax (VAT), which may particularly disadvantage women by crowding out their economic participation. A key driver of VAT introductions has been the International Monetary Fund (IMF). To counterbalance of-payments woes, IMF advice for cash-stripped countries has frequently focused on shifting toward broad-based consumption taxes while lowering trade taxes and corporate income taxes. We expect this tax policy advice – while ostensibly gender-blind – to contribute in practice to a deterioration in women's socioeconomic well-being. To test this hypothesis, we construct a panel dataset for 147 countries from 1980 to 2016 and estimate the effect of IMF programs on women's economic participation, education and health. Accounting for selection effects, we find that women's life chances deteriorate relative to men's if a country undergoes an IMF program with tax conditionality. We corroborate these findings to demonstrate the mechanism underlying these effects by showing a negative effect of IMF-induced de jure VAT adoption on women's life chances. We provide complementary individual-level evidence from the World Values Surveys based on 98 countries from 1981 to 2019. We show that during an IMF program with tax conditionality, women are significantly less satisfied with home life and report more material hardships. Our results provide evidence of the potential for unintended consequences of IMF revenue prescriptions for women, supporting calls for increased attention to gender-responsive budgeting.

1. Introduction

How do tax policies affect women? A now standard prescription for developing countries in the globalized economy is to reform their tax system to shift away from trade and corporate taxes and toward consumption taxes.[1],[2],[3] In this way, it is argued developing countries can strengthen fiscal capacity, reduce tax fraud and increase revenue. Tax reform is a standard tool in international financial institutions' (IFIs) "toolkit." The implementation of a value added tax (VAT) is a particularly favoured policy recommendation. By 2016, 167 countries had adopted a VAT. The trend has been described by the International Monetary Fund (IMF or Fund) as "the most dramatic – and probably most important – development in taxation in the latter part of the twentieth century, and it still continues."[4]

But tax reform produces winners and losers. VAT is a consumption tax, raising immediate questions about its effect on poor and marginalized groups.[5],[6] Compliance costs for VAT are also high, particularly for small and medium-sized enterprises,

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1. Crivelli, E. and S. Gupta (2014). Does conditionality in IMF-supported programs promote revenue reform? IMF Working Papers 14(206).
2. Bastiaens, I. and N. Rudra (2018). Democracies in Peril: Taxation and Redistribution in Globalizing Economies. Cambridge University Press.
3. Reinsberg, B., T. Stubbs, and A. Kentikelenis (2020). Taxing the people, not trade: the international monetary fund and the structure of taxation in developing countries. Studies in Comparative International Development 55, 278-304.
4. Ebrill, L., M. Keen, J. P. Summers, and V. Bodin (2002). The allure of the value-added tax. *IMF: Finance and Development 39*(2).
5. Barnett, Kathleen, C. G. (2004). Gender impacts of government revenue collection: The case of taxation. Commonwealth Economic Paper Series.

where women are disproportionately represented. Indeed, feminist scholars have drawn attention to the distinctly *gendered* effects of internationally imposed tax reforms and structural adjustments more broadly.[7] While policymakers, including in the IMF, have begun to take notice of these critiques,[8],[9] a full reckoning has not occurred. This is partly because evidence of the consequences of the VAT for women is as yet sporadic and contextual. Studies of particular countries provide valuable insights,[10],[11] but do not offer generalizable conclusions.

Here, we offer systematic cross-national evidence that IMF tax conditionality, via the introduction of a VAT, has negative unintended consequences for women's socioeconomic well-being. We assess women's status relative to men's in three areas that, together, are central determinants of women's life chances: economic activity, educational attainment and health.[12]

In seeking to uncover the effect of IMF tax conditionality on women's life chances, we face two inferential challenges. First, IMF programs are implemented in times of economic crisis, which negatively affect women via various channels not necessarily related to the IMF. Furthermore, tax conditions, in particular, may be associated with more severe crises in which the IMF imposes more expansive and numerous fiscal policy conditions. Our task, then, is to isolate the effects of tax conditionality from the (crisis) conditions under which such conditionality is applied. We address this by including a set of standard controls capturing the severity of economic crises, as well as including an indicator variable for other IMF programs (without tax conditionality). In this way, we isolate tax-related effects while still controlling for the general economic conditions associated with IMF program participation. Second, austerity-induced economic hardship can produce negative societal consequences affecting all citizens (regardless of gender).[13] To ensure that we are capturing the specific, disproportionate hardship that is borne by women, we control for male life chances in our models, meaning that all our estimates predicting women's life chances are measured *relative to men's*. For example, models predicting female labour force participation include a control for contemporaneous male labour force participation; and we follow the same procedure for all dependent variables.

We have constructed a panel dataset covering 147 countries from 1980 to 2016. Our empirical strategy has four parts. First, we estimate the effect of IMF tax conditionality on women's labour force participation, education enrolment rates and cardiovascular disease (a health outcome affected by stress and economic hardship). Because some countries cycle in and out of IMF programs, we employ the PanelMatch method[14] to adjust for inferential problems stemming from treatment reversals. We find that women in countries under an IMF program with tax conditionality exhibit lower labour force participation, higher unemployment and lower tertiary school enrolment.

Second, we undertake an instrumental variable analysis to address the potential endogeneity of VAT introduction with respect to gendered outcomes. Instrumenting VAT with IMF tax programs, we find negative effects on all three areas of women's life chances: economic participation, cardiovascular disease and educational enrolment. As a byproduct of our instrumentation strategy, we corroborate that IMF tax conditionality historically has been a strong driver for VAT adoption in developing countries. Third, as a final check on the gendered effects of VAT, we employ a staggered difference-in-differences design, which produces broadly consistent results: VAT is associated with lower labour force participation and worse health outcomes for women. Finally, we provide complementary individual-level evidence from the World Values Surveys based on 98 countries from 1981 to 2019. We show that during an IMF program with tax conditionality, women are significantly less satisfied with home life and report more material hardships compared to years under an IMF program without tax conditionality, confirming earlier anecdotal evidence concerning the adverse impact of IMF-supported adjustment programs.[15]

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6. There is some debate as to whether VAT is always regressive: https://www.imf.org/external/pubs/ft/fandd/2002/06/ebrill.htm. *See also* Younger et al., 1999.
7. Afshar, H. and C. Dennis (1992). Women, recession and adjustment in the third world: Some introductory remarks. In *Women and adjustment policies in the Third World*, pp. 3-12.
8. Asai, Miyoko, Q. C. J. H. X. H. and Q. Zhang (2023). *The role of structural fiscal policy on female labor force participation in OECD countries. IMF Working Paper 23(186)*.
9. Baer, Katherine, M. C. E. G. C. N. and K. Williams (2023). Gender and revenue administration principles and practices. IMF Technical Notes and Manuals.
10. Grown, C. and I. Valodia (2010). Taxation and Gender Equality: A Comparative Analysis of Direct and Indirect Taxes in Developed and Developing Countries. New York: Routledge.
11. Akram-Lodhi, H. and I. V. Steveren (2003). A gender analysis of the impact of indirect taxes on small and medium enterprises in Vietnam. UN Women: Financing for Gender Equality.
12. Here, we opt for a wider concept to capture women's well-being for several reasons. First, using this wider concept, we mirror recent advances in social science research on gender empowerment, relying on a wider set of social, political and economic outcomes to measure women's well-being (for a survey, *see* Desai et al. (2022)). Second, substantial literature in international political economy has documented the viability of tax shifts and IMF programs to impact these areas of individuals' lives, making this set of indicators suitable for an in-depth investigation concerning the gendered effects of tax policy reform (Genschel and Seelkopf, 2021; Betz et al., 2021; Guisinger and Kleinberg, 2023).
13. Kentikelenis, A. and T. Stubbs (2023). *A Thousand Cuts: Social Protection in the Age of Austerity*. Oxford University Press.
14. Imai, K., I. S. Kim, and E. H. Wang (2023). Matching methods for causal inference with time-series cross-sectional data. American Journal of Political Science 67(3), 587-605.
15. For an extensive review, *see*, for instance, Afshar and Dennis (2016).

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We contribute to several strands of the literature. For one, we expand existing literature on women in political economy.[16],[17],[18],[19],[20],[21],[22] Our work primarily complements research on the impact of gendered implications of tax policy.[23] We innovate by tracing the origins of tax policy reforms back to their source: IMF programs. In doing so, we complement research studying the adverse socioeconomic impact of IMF programs.[24],[25],[26] Our work is, therefore, closely related to the literature that focuses on IMF programs and their impact on women's well-being.[27],[28],[29],[30],[31]

Here, we offer two additional innovations. First, we adopt a broad view of women's life chances – accounting for multiple dimensions of well-being – that expands upon the more narrow focus on economic outcomes in prior research.[32],[33],[34] Second, in contrast to studies on the gendered effects of IMF programs writ large,[35] we focus on the role of revenue-side conditionality *via the introduction of a VAT*, offering theoretical and empirical support for a specific channel of influence that is not typically emphasized in gender-based critiques of IMF conditionality.[36],[37],[38] Despite the increasing attention paid by the IMF to gender-related challenges in their adjustment programs, quantitative evidence delineating the specific impact of Fund-sponsored reforms on women remains limited. Importantly, we show that seemingly "efficient" tax policy reforms aimed at mobilizing government revenue without distorting structural adjustment conditions can produce the unintended side effect of placing a disproportional burden on women. From a policy perspective, our findings support the urgent need to incorporate concepts such as gender budgeting into IMF lending frameworks.[39]

2. IMF and Revenue Conditionality

When governments turn to the IMF for bailout funding, they often desperately need fresh capital to stabilize their balance of payments. Since starting its lending operations in the 1970s, the IMF has attached loan conditions when it provided a helping hand.[40],[41],[42] Built around general balance-of-payments considerations, IMF loan conditions aim to reduce mounting pressures on the balance of payments and mobilize funds to restore the government's ability to service creditor claims. In terms of fiscal policy reforms, given the urgency to mobilize public funds, the IMF frequently requests governments to implement

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21. Guisinger, A. and K. Kleinberg (2023). The unlevel playing field: Gender, discrimination, and global attitudes toward trade. Foreign Policy Analysis.
22. Armstrong, B., T. D. Barnes, D. Chiba, and D. Z. O'Brien (2023). Financial crises and the selection and survival of women finance ministers. American Political Science Review, 1-19.
23. For a survey, *see* Genschel and Seelkopf (2021).
24. Reinsberg, B., A. Kern, M. Heinzel, and S. Metinsoy (2023). Women's leadership and the gendered consequences of austerity in the public sector: Evidence from IMF programs. Governance, 37(1), 303-321.
25. Stubbs, T., B. Reinsberg, A. Kentikelenis, and L. King (2020). How to evaluate the effects of IMF conditionality. The Review of International Organizations 15(1), 29-73.
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27. Cağatay, N. and Ş. Özler (1995). Feminization of the labor force: The effects of long-term development and structural adjustment. World development 23(11), 1883-1894.
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29. Donald, K. and N. Lusiani (2017). The IMF, gender equality and expenditure policy. Bretton Woods Policy Briefing.
30. Afshar, H. and C. Dennis (2016). Women and Adjustment Policies in the Third World. Springer.
31. Forster, T., A. E. Kentikelenis, T. H. Stubbs, and L. P. King (2020). Globalization and health equity: The impact of structural adjustment programs on developing countries. Social Science & Medicine 267, 112496.
32. Lee, S.-H. and B. Woo (2021). IMF= I'm fired! IMF program participation, political systems, and workers rights. Political Studies 69(3), 514-537.
33. Detraz, N. and D. Peksen (2016). The effect of IMF programs on women's economic and political rights. International Interactions 42(1), 81-105.
34. Cağatay, N. and Ş. Özler (1995). Feminization of the labor force: The effects of long-term development and structural adjustment. World development 23(11), 1883-1894.
35. For instance, Pandolfelli et al. (2014) show that IMF loans are associated with increases in maternal mortality in Sub-Saharan Africa but do not attribute this effect to specific program elements.
36. Afshar, H. and C. Dennis (2016). Women and Adjustment Policies in the Third World. Springer.
37. Stewart, F. (2016). Can adjustment programmes incorporate the interests of women? In Women and Adjustment Policies in the Third World, pp. 13-44. Springer.
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42. Dreher, A., J.-E. Sturm, and J. R. Vreeland (2015). Politics and IMF conditionality. Journal of Conflict Resolution 59(1), 120-148.

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radical spending cuts alongside the implementation of significant tax reforms.[43],[44],[45],[46],[47] Next to advocating for the phasing-out of subsidy schemes,[48] the Fund consistently requires governments to widen and broaden the tax base through an increase in taxes on goods and services.

An elegant and technically appealing way of widening the tax base has been the introduction of value added taxes (i.e. VAT). The VAT is a tax levied at every stage of the production chain and is thus believed to be more effective than a final retail sales tax due to the multiple points at which it is remitted to government coffers.[49] Furthermore, it has distinct advantages over other forms of taxation, such as import tariffs, income taxes or inflation taxes.[50] Importantly, the introduction of a VAT allows for a broadening of the revenue base without working at cross purposes with structural reform measures (e.g. trade liberalization).[51],[52],[53] Based on this logic, IMF revenue-side conditionality programs have advocated for the introduction and augmentation of VAT. Empirical evidence supports the notion that IMF programs are associated with increases in revenue from VAT (and other consumption tax) but not with revenue from trade or income tax.[54] This represents a dramatic shift in revenue collection for many developing countries, yet it is a change whose consequences have not been fully explored.[55] At the societal level, in particular, questions remain about how these shifts in tax policy impact marginalized groups. Here, we focus on the impact of VAT on women – a group whose economic participation is essential for unlocking economic growth in developing countries.[56],[57],[58]

3. The Gendered Effects of VAT Reform

Feminist critiques of structural adjustments tend to focus on the spending side of these programs.[59],[60],[61],[62],[63],[64] They highlight the broadly harmful effects of reduced social spending for health, education, employment and income, which fall disproportionately on women's shoulders. For instance, Detraz and Peksen (2016) show that IMF programs are associated with a deterioration in women's economic rights. The essential problem is that women bear the "heaviest burden...of poverty *and stress* resulting from cutbacks in public expenditure" (emphasis added).[65] This has knock-on effects on women's education and economic participation, as it becomes more costly and difficult for women to go to school or work outside the home.

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43. Here, we concentrate on loan conditions aimed at public spending and fiscal policy. These are frequently embedded in IMF programs as structural adjustment measures that target a country's wider economic policy framework (Kentikelenis et al., 2016; Beazer and Woo, 2016; Rickard and Caraway, 2019).
44. Nooruddin, I. and J. W. Simmons (2006). The politics of hard choices: IMF programs and government spending. International Organization 60(4), 1001-1033.
45. Vreeland, J. R. (2006). The International Monetary Fund (IMF): Politics of Conditional Lending. Routledge.
46. Hamm, P., L. P. King, and D. Stuckler (2012). Mass privatization, state capacity, and economic growth in post-communist countries. American Sociological Review 77(2), 295-324.
47. Reinsberg, B., T. Stubbs, and A. Kentikelenis (2020). Taxing the people, not trade: the international monetary fund and the structure of taxation in developing countries. Studies in Comparative International Development 55, 278-304.
48. For a discussion, *see* Kentikelenis and Stubbs (2022).
49. As the VAT is a tax levied at every stage of production, with businesses allowed to claim credit for any VAT already paid to a supplier, critics point out that the VAT is complicated both for governments to administer and for firms to comply with, particularly in developing countries with weak bureaucratic capacity and large informal sectors (De Paula and Scheinkman, 2010; IMF, 2023). For further discussion, *see* https://www.imf.org/external/pubs/ft/fandd/2002/06/ebrill.htm).
50. Income tax in developing countries, for example, is notoriously difficult to administer (Tanzi and Zee, 2001).
51. Bastiaens, I. and N. Rudra (2016). Trade liberalization and the challenges of revenue mobilization: can international financial institutions make a difference? Review of International Political Economy 23(2), 261-289.
52. Reinsberg, B., T. Stubbs, and A. Kentikelenis (2020). Taxing the people, not trade: the international monetary fund and the structure of taxation in developing countries. Studies in Comparative International Development 55, 278-304.
53. IMF (2023). How to combat value-added tax refund fraud. Fiscal Affairs Note 23(1).
54. Reinsberg, B., T. Stubbs, and A. Kentikelenis (2020). Taxing the people, not trade: the international monetary fund and the structure of taxation in developing countries. Studies in Comparative International Development 55, 278-304.
55. In terms of the macroeconomic picture, several studies have examined how VAT introduction impacts government revenue (Reinsberg et al., 2020; Crivelli and Gupta, 2014; Alavuotunki et al., 2019).
56. Tzannatos, Z. (1999). Women and labor market changes in the global economy: Growth helps, inequalities hurt and public policy matters. World Development 27(3), 551-569.
57. Duflo, E. (2012, December). Women empowerment and economic development. 50(4), 1051-1079.
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61. Beneria, L. (1999). Structural adjustment. In The Elgar Companion to Feminist Economics, pp. 687-95.
62. Afshar, H. and C. Dennis (2016). Women and Adjustment Policies in the Third World. Springer.
63. Kamal, R. A. (2022). On the Effect of IMF Programs and Conditions: A Gender Lens. Future Journal of Social Science 1(1), Article 4.
64. For an extensive survey concerning government spending programs and austerity on women, *see* Detraz and Peksen (2016) and Afshar and Dennis (2016). For an EU-specific focus, *see* Elomaki (2012).
65. Afshar, H. and C. Dennis (2016). Women and Adjustment Policies in the Third World. Springer.

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Furthermore, the burden of unpaid care work increases.[66] Reduced social spending leads to declines in women's labour force participation[67] and public sector employment (though this is mitigated in countries where women are represented in government).[68]

On the revenue side, empirical evidence is less systematic but begins to show the potentially harmful effects of certain taxation policies for women.[69],[70],[71] Income tax structures that discourage work by secondary household earners are perhaps the most obvious example.[72],[73],[74],[75] But recent work highlights that consumption taxes can also have implicit gender biases.[76],[77],[78] Focusing specifically on the VAT, Emran and Stiglitz (2005) show theoretically that its implementation in developing economies with large informal sectors induces a shift toward further informal and home (unpaid) work. Clearly, this would disproportionately impact women, who already make up the bulk of the informal sector.[79],[80] For these reasons, critical voices among international development practitioners decry the "embedded gender biases in VAT design and implementation".[81]

The tax-related barriers to women's economic participation in developing countries stem fundamentally from social and economic inequalities.[82],[83],[84] These inequities shape the (gendered) effects of tax reform in two primary domains. First, for women *entrepreneurs*, changes in the tax code can produce adverse indirect effects. It is well established that women entrepreneurs in developing countries are disproportionately the owners of *small* and *micro* enterprises,[85] for which the burden of tax compliance is higher. Many women-owned small and micro businesses are unregistered, preventing them from redeeming tax payments on their inputs. Even when registered, few small businesses have the means to hire tax accountants.[86],[87] A recent study finds that small enterprises are less likely to file for VAT credits, creating an effectively higher tax burden.[88] In a study of small businesses in Vietnam,[89] it is concluded that women-owned small enterprises pay a higher share of their income in VAT due to their lower value added and lower access to unpaid (household) labour compared to male-owned businesses. Moreover, the IMF has a record of encouraging countries to eliminate VAT exemptions for small enterprises,

66. Donald, K. and N. Lusiani (2017). The IMF, gender equality and expenditure policy. Bretton Woods Policy Briefing.
67. Asai, Miyoko, Q. C. J. H. X. H. and Q. Zhang (2023). The role of structural fiscal policy on female labor force participation in OECD countries. *IMF Working Paper 23*(186).
68. Reinsberg, B., A. Kern, M. Heinzel, and S. Metinsoy (2024). Women's leadership and the gendered consequences of austerity in the public sector: Evidence from IMF programs. Governance, 37(1), 303-321.
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73. Klasen, S. (2019). What explains uneven female labor force participation levels and trends in developing countries? The World Bank Research Observer 34(2), 161-197.
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77. Coelho, M. D., A. Davis, A. D. Klemm, and C. O. Buitron (2022). Gendered taxes: The interaction of tax policy with gender equality. IMF Working Paper No. 22/26.
78. Giokaris, I. P., M. E. Pouliasi, et al. (2020). To tax or not to tax? tampon taxes and gender (in) equality: the Cyprus case-study. Cyprus Review 32(1), 257-278.
79. Duflo, E. (2012, December). Women empowerment and economic development. 50(4), 1051-1079.
80. Coelho, M. D., A. Davis, A. D. Klemm, and C. O. Buitron (2022). Gendered taxes: The interaction of tax policy with gender equality. IMF Working Paper No. 22/26.
81. Buenaventura, M. and C. Miranda (2017). The gender dimensions of the IMF's key fiscal policy advice on resource mobilisation in developing countries. Bretton Woods Project.
82. Baer, MK. MM Cotton, E Gavin, C Negus, KR Williams (2023). Gender and revenue administration principles and practices. IMF Technical Notes and Manuals.
83. Kabeer, N. (2020). Women's empowerment and economic development: a feminist critique of storytelling practices in "randomista" economics. Feminist Economics 26(2), 1-26.
84. Grown, C. and I. Valodia (2010). Taxation and Gender Equality: A Comparative Analysis of Direct and Indirect Taxes in Developed and Developing Countries. New York: Routledge.
85. Kabeer, N. (2020). Women's empowerment and economic development: a feminist critique of storytelling practices in "randomista" economics. Feminist Economics 26(2), 1-26.
86. WBL (2022). Annual report 2022. The World Bank: Women, Business, and the Law.
87. Furthermore, substantial evidence supports the notion that women entrepreneurs face significant hurdles regarding access to finance, technology and legal protection to settle business disputes (WBL, 2022; Kabeer, 2020).
88. Brockmeyer, A, G Mascagni, V Nair, M Waseem, M Almunia. (2024). Does the value-added tax add value? lessons using administrative data from a diverse set of countries. Journal of Economic Perspectives 38(1), 107-32.
89. Akram-Lodhi, H. and I. V. Steveren (2003). A gender analysis of the impact of indirect taxes on small and medium enterprises in Vietnam. UN Women: Financing for Gender Equality.

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favouring a single flat rate applicable to all.[90] Thus, these recommendations can be expected to hit women-led businesses particularly hard.

Second, the gendered impact of VAT applies to women as *consumers*. Women-led households earn less on average and thus pay a higher proportion of their income in consumption tax.[91],[92] It has also been shown that women-led households spend a higher share of their income on goods related to education, food and health, which benefit children.[93] To some extent, the adverse effects of VAT on poor households can be mitigated via exemptions for basic food and sanitary products.[94] But, again, the IMF advocates for simplicity in VAT design, which disfavours exemptions.[95] In its engagement with Bangladesh, for example, the IMF supported removing VAT product exemptions in a 2012 reform.[96] A similar dynamic played out in the Philippines, where under IMF guidance, the country removed VAT exemptions for social housing, cooperatives and electricity, which would have benefited the poor.[97]

We expect these gendered consequences to manifest themselves in three areas: (i) women's economic participation, (ii) women's education and (iii) women's health. As outlined above, VAT reduces women's economic activity due to their disadvantaged socioeconomic status: women as entrepreneurs experience a higher burden of VAT compliance and as consumers a higher (relative) burden of VAT cost. The negative effects on household income increase pressures for female children to stay home and work in the informal economy rather than attend school.[98] In terms of health, the cumulative impact of these effects may lead to increased stress- and poverty-related diseases for women. Together, these three areas significantly impact women's *life chances* – understood as opportunities for successful socioeconomic advancement and quality of life.[99] Synthesizing these insights, we formulate our key hypothesis.

Hypothesis 1: Countries subject to an IMF program with tax conditionality will exhibit lower levels of women's economic participation, lower levels of girls' school enrolment and negative repercussions for women's health.

4. Data and Methods

To examine the impact of IMF tax conditionality on women's life chances, we have constructed a panel dataset of 147 countries from 1980 to 2016. To ensure that treated units are comparable to control units, this dataset excludes high-income countries as those are almost never under IMF programs. As our theoretical argument in principle could extend to high-income countries, we present analysis including these countries in robustness tests.

4.1. Measuring women's life chances

Our theoretical discussion highlights three dimensions of women's life chances. As we want to benchmark women's status relative to men's, we require country-level indicators that measure socioeconomic outcomes separately by gender. Where we identify similar variables pertaining to the same dimension, we choose the variable(s) with less missing data.

In the area of *work*, we measure labour force participation and the unemployment rate. In the area of *health*, we measure the prevalence of cardiovascular disease and child mortality. In the area of *education*, we measure the primary enrolment rate, secondary enrolment rate and tertiary enrolment rate. All variables are available from the World Development Indicators.[100] The supplemental Appendix includes variable descriptions and descriptive statistics for these and all other variables (Table A1., *see* Appendix).

90. Buenaventura, M. and C. Miranda (2017). The gender dimensions of the IMF's key fiscal policy advice on resource mobilisation in developing countries. Bretton Woods Project.
91. Wanjala, Bernadette, J. K. N. M. (2006). Gender and taxation in Kenya. Nairobi: Institute of Economic Affairs.
92. Coelho, M. D., A. Davis, A. D. Klemm, and C. O. Buitron (2022). Gendered taxes: The interaction of tax policy with gender equality. IMF Working Paper No. 22/26.
93. Grown, C. and I. Valodia (2010). Taxation and Gender Equality: A Comparative Analysis of Direct and Indirect Taxes in Developed and Developing Countries. New York: Routledge.
94. Ibid
95. IMF (2011). Revenue mobilization in developing countries. Nairobi: Institute of Economic Affairs https://www.imf.org/external/np/pp/eng/201 1/030811.pdf.
96. Buenaventura, M. and C. Miranda (2017). The gender dimensions of the IMF's key fiscal policy advice on resource mobilization in developing countries. Bretton Woods Project, 6-7.
97. IMF (2016). Country report: Article iv consultation with the Philippines.
98. Reimers, F. (1994). Education and structural adjustment in Latin America and sub-Saharan Africa. International Journal of Educational Development 14(2), 119-29.
99. Duncan, G., W. J. Yeung, J. Brooks-Gunn, and J. R. Smith (1998). How much does childhood poverty affect the life chances of children? American Economic Journal: Macroeconomics 63(3), 406-423.
100. WDI (2021). World development indicators 2021. Dataset.

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4.2. IMF programs, tax conditionality and tax adoption

Our key predictor of interest is a country's participation in an IMF program with tax conditionality. We draw this indicator from previous research, which uses a keyword-assisted search of IMF loan agreements to identify cases in which these programs require countries to make changes in their tax code.[101] In most cases, IMF-sponsored reforms pertain to consumption taxes, specifically VAT introduction and VAT base adjustment. Conversely, IMF-sponsored reforms request the abolition of trade taxes.[102] We follow previous research using a dichotomous indicator of IMF tax conditionality because these conditions – if included in a program – are never numerous. Furthermore, the total number of programs with tax conditionality is relatively low.

Our secondary predictor of interest is VAT adoption, available from the Tax Introduction Database.[103] Previous research has already established that countries alter their tax structures – specifically through VAT introduction – in the wake of IMF programs with tax conditionality.[104] An additional plausibility test of our argument would, therefore, involve examining the direct impact of VAT adoption on women's life chances. If our argument is true, we will find similar results compared to our analysis of IMF tax conditionality and women's life chances.

4.3. Econometric methods

A key inferential challenge is that IMF program participation often unfolds in a series of spells rather than being an absorbing state. Two-way fixed-effects estimates might be biased in the presence of treatment reversals due to the problem of "forbidden comparisons". Where treatment reversals are allowed, a country that already had an IMF program in the past might become a control unit in the treatment estimate of another country. This is problematic because the initial treatment might have affected potential outcomes in subsequent years. The methodological literature offers a solution for how to handle treatment reversals. Specifically, we use the PanelMatch estimator, which matches each treated observation with a control observation from other units in the same time period with identical treatment history up to a pre-specified number of lags.[105] In addition, the estimate uses propensity-score weighting to ensure that treated units have similar pre-treatment outcomes as the control units for variables specified by the researcher and in each year of the pre-treatment year. Identification requires the additional assumption of unconfoundedness up to $T_0 - L$ where T_0 is the treatment year and L is the number of lags of identical treatment history between the treated unit and the control unit. The choice of lags is arbitrary but should be made based on knowledge of context.

In addition, we wish to establish *how* IMF tax conditionality affects women's life chances. In line with our theoretical discussion, we posit that VAT adoption is the primary mechanism through which IMF tax conditionality affects women's life chances. Building on the idea that IMF tax conditions have spurred VAT adoption in many countries,[106] we implement an instrumental-variable design that we estimate using two-stage least squares regression. Identification requires the assumption that IMF tax conditionality impacts gender outcomes primarily through VAT adoption, conditional on controlling for other aspects of IMF program support. As we confirm with *F*-tests, IMF tax conditionality predicts VAT adoption reasonably well for most outcomes, except where there is a considerable amount of missing data in these outcomes.

Unlike IMF program participation, VAT adoption is an absorbing state.[107] Once a country has decided to adopt this tax type, it does not revert back, given the stickiness of institutions. The appropriate research design to analyse the socioeconomic effects of VAT adoption is a difference-in-differences analysis with staggered adoption. The methodological literature offers a ready-made estimator for this set-up.[108] The assumptions required for identification are threefold. The first is the "parallel trends" assumption, which requires that relevant potential outcomes of adopters and non-adopters evolve similarly. The second assumption is no-treatment reversal, which is fulfilled by definition. Finally, unlike the canonical two-way fixed-effects estimator, we do not need to assume homogeneous treatment effects. This is because the staggered adoption estimator computes

101. Reinsberg, B., T. Stubbs, and A. Kentikelenis (2020). Taxing the people, not trade: the international monetary fund and the structure of taxation in developing countries. Studies in Comparative International Development 55, 278-304.
102. Bastiaens, I. and N. Rudra (2016). Trade liberalization and the challenges of revenue mobilization: can international financial institutions make a difference? Review of International Political Economy 23(2), 261-289.
103. Genschel, P. and L. Seelkopf (2021). Global Taxation: How Modern Taxes Conquered the World. Oxford University Press.
104. Reinsberg, B., T. Stubbs, and A. Kentikelenis (2020). Taxing the people, not trade: the international monetary fund and the structure of taxation in developing countries. Studies in Comparative International Development 55, 278-304.
105. Imai, K., I. S. Kim, and E. H. Wang (2023). Matching methods for causal inference with time-series cross-sectional data. American Journal of Political Science 67(3), 587-605.
106. Reinsberg, B., T. Stubbs, and A. Kentikelenis (2020). Taxing the people, not trade: the international monetary fund and the structure of taxation in developing countries. Studies in Comparative International Development 55, 278-304.
107. VAT removal, as happened in Malaysia, is rather uncommon. Our inability to measure such removals is a small price to pay for gaining analytical leverage beyond single cases.
108. Borusyak, K., X. Jaravel, and J. Spiess (2021). Revisiting event study designs: Robust and efficient estimation. arXiv preprint arXiv:2108.12419.

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treatment effects separately for each cohort – a group of countries that are treated in the same year – and aggregates these effects using appropriate weights. To make these assumptions more plausible, we altered the sample only to include countries that were at risk of VAT adoption.

4.4. Model specification

The availability of data on development outcomes by gender should obviate the need for many additional control variables. In all specifications, we control for men's life chances as this variable would absorb any effects related to contextual factors, exogenous shocks and endogenous dynamics.

In other words, by controlling for men's life chances, we isolate the differential effect of our policy treatment that only affects women's life chances. Our research design thereby promises valid inference even without controlling for a large number of additional factors. Nevertheless, we do include an indicator variable for IMF programs without tax conditionality. This helps us isolate the effect of tax conditions relative to IMF programs generally. Adjusting for IMF programs without tax conditions also proxies for most factors generally related to selection into IMF programs, which is why we do not control for them in our main analyses.

In additional tests, we include control variables from the IMF effectiveness literature which, similar to our design, features models with IMF program participation on the right-hand-side.[109],[110],[111],[112] In particular, we measure the incidence of a financial crisis[113] to avoid attributing effects to IMF programs rather than the crises that precede them. We also account for the severity of an economic crisis to mitigate concerns that tax conditionality may be imposed by the IMF in more serious crises, which may have greater consequences for women and are likely met by larger numbers of IMF conditions in different areas. We include variables for the level of GDP growth, the logged inflation growth, and the level of reserves in months of imports, all with a one-period lag.[114]

5. Results

We first present country-level results on the effect of IMF tax conditionality on women's life chances using panel-matching methods and difference-in-differences analyses. To cast light on the underlying mechanism, we then replicate this analysis using VAT adoption as our policy treatment. Finally, to complement the country-level analysis, we also present individual-level survey evidence.

5.1. IMF tax conditionality and women's life chances

We calibrate the panel-matching estimator in the following ways. First, we require a similar pretreatment history of the treatment variable for up to five years. Second, we further balance the estimation using propensity score weights based on women's and men's pre-treatment outcomes for every year up to five years prior to the treatment. This ensures we eliminate any omitted trends that could drive the outcomes of interest.

109. Moser, C. and J.-E. Sturm (2011). Explaining IMF lending decisions after the cold war. The Review of International Organizations 6(3-4), 307-340.
110. Reinsberg, B., T. Stubbs, and A. Kentikelenis (2020). Taxing the people, not trade: the international monetary fund and the structure of taxation in developing countries. Studies in Comparative International Development 55, 278-304.
111. Nooruddin, I. and J. W. Simmons (2006). The politics of hard choices: IMF programs and government spending. International Organization 60(4), 1001-1033.
112. Dreher, A. (2006). IMF and economic growth: The effects of programs, loans, and compliance with conditionality. World Development 34(5), 769-788.
113. Laeven, L. and F. Valencia (2013). Systemic banking crises database. IMF Economic Review 61, 225 - 270.
114. WDI (2023). World development indicators 2023. Dataset.

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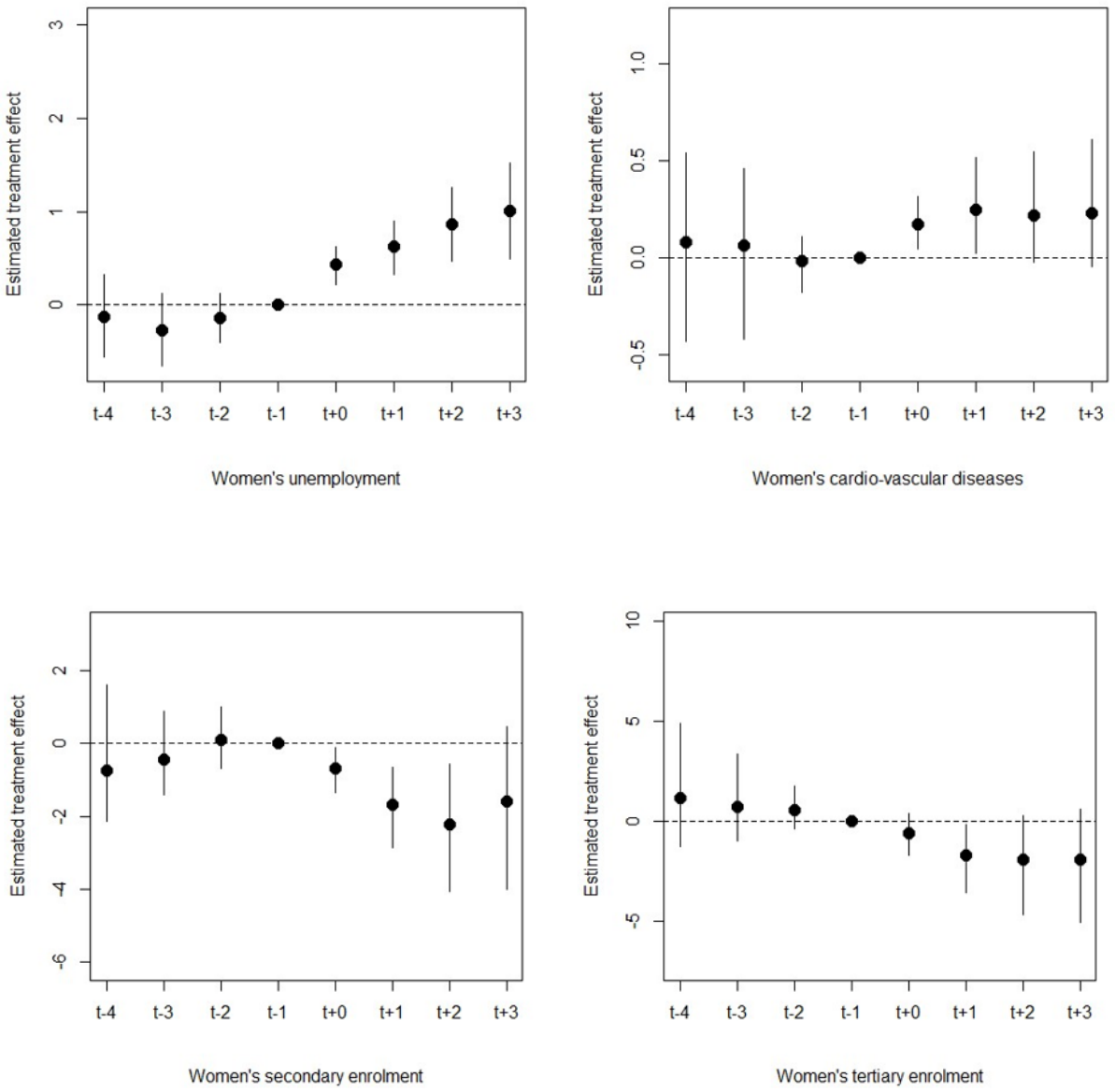
Figure 1. IMF tax conditionality and women's life chances



Outcomes with insignificant treatment effects suppressed. All estimates shown with 90% confidence intervals.

Using this panel-matching estimator, we find significant effects of IMF programs with tax conditionality on some dimensions of women's life chances (Figure 1.). Specifically, we obtain a significant increase in women's unemployment due to tax conditionality. In contrast, labour force participation is not affected. Furthermore, we recover a significant uptick in the prevalence of cardiovascular disease among women. However, child mortality does not respond to tax conditionality. Looking at education outcomes, we find significantly negative effects of IMF tax conditionality on secondary and tertiary enrolment but not primary enrolment.

For robustness tests, we also present estimates from conventional two-way fixed-effects regressions, although their inferential assumptions are unlikely to be met. The two-way fixed-effects estimator is known to be biased in the presence of treatment

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effect heterogeneity, carry-over effects and treatment reversals.[115] Despite these challenges, it may serve as a useful comparison.

Two-way fixed-effects findings are broadly consistent with the panel-matching results (Table 1.). IMF tax conditionality is significantly negatively related to women's labour force participation (L1). IMF tax conditionality also tends to be positively related to women's unemployment (L2). There are no significant relationships between IMF tax conditionality and health outcomes (H1-H2). In terms of enrolment outcomes, (E1-E3), IMF tax conditionality is significantly negatively related to women's tertiary enrolment (E3).

Table 1. IMF tax conditionality and women's life chances

	L1	L2	H1	H2	E1	E2	E3
With tax conditionality	–0.099**	0.093*	–0.002	0.001	0.093	–0.164	–0.361***
	(0.044)	(0.049)	(0.037)	(0.017)	(0.148)	(0.119)	(0.110)
Without tax conditionality	–0.042	0.121**	–0.021	–0.007	–0.015	–0.291***	0.056
	(0.048)	(0.056)	(0.038)	(0.014)	(0.107)	(0.097)	(0.107)
Observations	3,483	3,354	2,244	5,091	3,503	2,457	1,862
Countries	129	129	132	139	136	133	122
R-squared	0.402	0.504	0.507	0.998	0.700	0.568	0.584
p-value	0.244	0.585	0.610	0.574	0.405	0.334	0.005

Notes: Dependent variables are in differences and listed at the top of each column. L captures labour market outcomes, H is related to health outcomes and E represents education outcomes. Control variables not shown include the men-specific outcome, the lagged women-specific outcome in levels and two-way fixed effects. Standard errors clustered on countries in parentheses. Significance levels * p <.1, ** p <.05, *** p <.01.

In the supplemental Appendix, we probe the robustness of these results further. To begin, we include all countries in the analysis – rather than just developing countries. We find that IMF programs with tax conditionality appear to significantly reduce women's labour force participation (L1) while being related to increased women's unemployment (L2). For the remaining outcomes, we confirm a negative relationship between IMF programs and tertiary enrolment (E3), whereas IMF programs without tax conditions have no significant relationship with this outcome (Table A2., *see* Appendix).

We also submit our main findings to additional control variables typically associated with IMF program participation: financial crisis, foreign currency reserves, economic growth, and the change in the inflation rate. While the inclusion of these variables leads to a drop in observations, we are still able to recover a significantly negative relationship between IMF programs with tax conditionality and the tertiary enrolment rate. The respective coefficients for the other outcomes are in line with expectations but fail to reach statistical significance (Table A3., *see* Appendix).

We further address concerns about measurement choices. First, we probe a narrower definition of tax conditionality, focusing on conditions in which "VAT" is a keyword.[116] This is not our preferred specification given that we understand IMF tax advice more holistically, aimed at altering tax structures rather than changing a singular tax like the VAT. Focusing on only VAT conditionality therefore misses important aspects of IMF tax advice. Nonetheless, we find that IMF programs with VAT conditionality are related to significant decreases in women's labour force participation and girls' tertiary enrolment (Table A4., *see* Appendix). Second, we use the women-to-men ratio in livelihood outcomes.[117] We again find IMF programs with tax conditionality to be related to significant decreases in the ratios for labour force participation and tertiary education, but not for unemployment – unlike in our main results (Table A5., *see* Appendix).

A key inferential challenge is endogeneity. Specifically, there may be omitted variables – like poor state capacity – driving both tax conditionality and women's life chances. In the presence of omitted-variable bias, the relationship between IMF tax conditionality and women's life chances would be spurious. Note that this problem is different from selection into IMF programs more generally. We have addressed this selection problem by controlling for participation in an IMF program without tax

115. Liu, L., Y. Wang, and Y. Xu (2022). A practical guide to counterfactual estimators for causal inference with time-series cross-sectional data. American Journal of Political Science.
116. We also include matches for "value added tax" and related spellings.
117. For example, the first outcome would be the women's labour participation divided by the men's labour participation rate.

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conditionality, which should be driven by many of the same fundamentals that also determine participation in IMF programs with tax conditionality. We address our concern about the endogeneity of tax conditionality through an instrumental variable analysis. We use a Bartik-style instrument based on the interaction between the US interest rate and the country-specific risk of adopting the VAT. A hike in the US interest rate – determined by the US Federal Reserve – will attract capital flows to the US financial market, thereby causing capital flight from more risky countries and increasing their cost of borrowing.[118],[119],[120] To counter these forces, developing countries need to mobilize fresh capital rapidly from internal and external sources. However, whether a country is susceptible to global interest rate hikes depends on its capacity to mobilize domestic resources via increasing VAT rates and the VAT base. Hence, we measure whether a country has already adopted the VAT. We use the Tax Introduction Database[121] to measure whether a country had adopted the VAT in the previous year or earlier. While the country-specific VAT exposure indicator is potentially endogenous, its interaction with the (exogenous) US interest rate is exogenous after controlling for fixed effects and potentially other observable confounders. Therefore, our identification strategy rests on a plausibly excludable Bartik-style instrument with endogenous exposure shares but exogenous common shocks.[122] Equipped with this instrument, we re-estimate our relationship of interest between IMF programs with tax conditionality and women's life chances. Table 2. shows the results. We find that IMF programs with tax conditionality significantly increase women's unemployment ($p < 0.05$). There also tends to be a negative effect on women's labour force participation that is not statistically significant.[123] In addition, there is evidence that tax conditionality decreases girl's secondary enrolment rates ($p < 0.1$). For the remaining outcomes, the coefficient estimates are too imprecisely estimated but generally point to negative impacts. Our results are unlikely to suffer from weak instruments, as the Kleibergen-Paap F-statistics are strictly above the conventional thresholds for all outcomes ($F > 10$).

Our general takeaway from the analysis is that women's life chances appear to deteriorate as a result of IMF tax conditionality.

Table 2. IMF tax conditionality and women's life chances using instrumental variables

	L1	L2	H1	H2	E1	E2	E3
With tax conditionality*	–0.093	1.054**	0.261	0.129	–0.789	–2.390*	–0.232
	(0.289)	(0.512)	(0.255)	(0.107)	(0.936)	(1.335)	(0.963)
Without tax conditionality	–0.042	0.548**	0.091	0.042	–0.349	–1.253**	0.026
	(0.136)	(0.241)	(0.115)	(0.045)	(0.414)	(0.628)	(0.447)
Observations	3,483	3,354	2,244	4,170	2,923	2,047	1,602
Countries	129	129	132	139	135	131	119
R-squared	0.327	0.415	0.392	0.998	0.707	0.459	0.622
F-statistic	36.718	28.497	15.248	33.220	25.862	12.990	13.369

Notes: Dependent variables are in differences and listed on top of each column. L captures labour market outcomes, H is related to health outcomes, and E represents education outcomes. Control variables not shown include the men-specific outcome, the lagged women-specific outcome in levels and fixed effects. Tax conditionality# is instrumented using the interaction between the lagged US interest rate and the country-specific exposure risk to VAT adoption. Standard errors clustered on countries in parentheses. Significance levels * p <.1, ** p <.05, *** p <.01

5.2. VAT adoption and women's life chances

In the remainder of this article, we aim to shed further light on the mechanism linking IMF programs with tax conditionality and women's life chances. To do so, we need two pieces of evidence. The first is that these specific IMF programs actually increase the likelihood of VAT adoption. In fact, existing research has already confirmed a strong causal impact of IMF programs with tax

118. Rey, H. (2015). Dilemma not trilemma: The global financial cycle and monetary policy independence. NBER Working Paper No. 21162.
119. Eichengreen, B. and P. Gupta (2015). Tapering talk: The impact of expectations of reduced Federal Reserve security purchases on emerging markets. Emerging Markets Review 25, 1-15.
120. Bauerle Danzman, S., W. K. Winecoff, and T. Oatley (2017). All Crises are Global: Capital Cycles in an Imbalanced International Political Economy. International Studies Quarterly 61(4), 907- 923.
121. Genschel, P. and L. Seelkopf (2021). *Global Taxation: How Modern Taxes Conquered the World*. Oxford University Press.
122. Goldsmith, A. A. (2020). Out of Africa? elections and capital flight revisited. International Studies Quarterly 64(1), 248-254.
123. In fact, other research has shown that women's labour force participation decreases in countries with poor societal gender norms during IMF programs (Kern et al., 2024).

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conditionality on the likelihood of VAT adoption.[124] The second piece of evidence that is left to examine is the link between VAT introduction and women's life chances. We can do so in two principal ways: one looks at the effect of VAT introduction driven by related IMF conditionality, whereas another is to examine the effect of VAT introduction on women's life chances more broadly. The latter analysis would boost the external validity of our findings to the extent that not all countries that adopt the VAT do so because of IMF pressure.

To examine the effect of VAT introduction driven by IMF conditionality, we employ an instrumental variable setting that examines women's life chances as a function of the predicted probability of VAT introduction (Table A6., *see* Appendix). We first confirm earlier research by showing that IMF tax conditionality strongly predicts VAT adoption in the first place, with F-statistics exceeding the conventional threshold for weak instruments (F > 10) in at least half of the models. Turning to the outcome stage, we find that VAT introduction undermines women's life chances in ways consistent with our previous findings on the effects of IMF programs. VAT does not affect labour force participation but increases unemployment among women. We also find a positive relationship between VAT adoption and women's cardiovascular diseases. Finally, IMF-induced VAT adoption negatively affects girls' secondary enrolment.[125]

To probe the general effects of VAT adoption – including for cases lacking inducement through related IMF conditionality – we employ a staggered difference-in-difference (DID)design. We choose an estimator that assumes VAT adoption is an absorbing state but that considers heterogeneous adoption dynamics.[126] For these reasons, the staggered DID estimator is preferable to a conventional two-way fixed-effects estimator. All estimations control for the contemporary outcome of interest among males and pre-treatment trends up to eight years before the treatment.[127]

Using this staggered DID design, we find that VAT introduction pushes women out of the labour force at a higher rate than men (Figure A1., *see* Appendix). This effect is not transitory but appears to aggravate over the long term. Conversely, we do not find any gendered effects with respect to unemployment. Turning to health outcomes, we find an increase in cardiovascular disease among women that becomes statistically significant four years after VAT introduction. Looking at education outcomes, we find no consistent effects. Compared with the earlier results where we considered VAT adoption induced by IMF conditionality, we also find mostly harmful effects of VAT adoption on women's life chances, although for fewer outcomes. Importantly, we do not find any significantly positive impacts of VAT adoption on women's outcomes under any scenario.

5.3. Complementary findings from individual-level data

We supplement our analysis on the country level with individual-level evidence from the World Values Survey (WVS).[128] The survey allows us to cast light on socioeconomic indicators and attitudes on the role of women in society in the wake of IMF programs. Aside from these questions, the survey includes standard sociodemographic information. One may wonder to what extent the WVS sample is representative of the full sample of countries. To find out, we conduct balance tests in the Appendix, which show that the WVS sample has a slightly higher likelihood of IMF program participation, especially IMF programs with tax conditionality. The difference in means is not statistically significant at the 5% level though. Looking at key outcomes, both samples have no systematic differences regarding women's labour force participation and women's unemployment rate, though the WVS sample fares better on women's health and girls' education (Table A8., *see* Appendix). We therefore believe the WVS analysis provides a useful complement to our main results.

Our first set of outcomes captures hardships felt by respondents. The WVS includes three questions asking respondents whether they had gone without food (S1), income (S2), or medicine (S3) in the past year. For example, regarding food insecurity, the question reads: "In the past twelve months, have you or your family gone without [food]?". Answer categories range from never, rarely, and sometimes too often, and we use this ordinal scale as if it were quasi-continuous to estimate linear models. We complement this battery of questions with another item – unfortunately only available for one wave – which asks respondents about how satisfied or unsatisfied they are with the situation in their household (S4). Answers are recorded on a ten-point scale, thus being amenable to treatment as a continuous variable. We invert the scale so that higher values indicate greater dissatisfaction. Our predictors are at two levels of analysis. At the country level, we include dummies for whether a country is under an IMF program with tax conditionality and an IMF program without tax conditionality. We introduced

124. Reinsberg, B., T. Stubbs, and A. Kentikelenis (2020). Taxing the people, not trade: the international monetary fund and the structure of taxation in developing countries. Studies in Comparative International Development 55, 278-304.
125. An alternative way to model this process that allows the comparison of direct effects and indirect effects is through mediation analysis. Here, we can examine specifically how IMF conditionality affects women's life chances directly and through its impact on VAT adoption. As mediation analysis does not accommodate endogeneity, we present this as exploratory analysis in the Appendix Table A7.
126. Borusyak, K., X. Jaravel, and J. Spiess (2021). Revisiting event study designs: Robust and efficient estimation. arXiv preprint arXiv:2108.12419.
127. In these models, we also control for total tax revenues. This should help mitigate the potentially confounding effect of revenue generation.
128. Haerpfer, C., R. Inglehart, A. Moreno, C. Welzel, K. Kizilova, J. Diez-Medrano, M. Lagos, P. Norris, E. Ponarin, and B. Puranen (2020). World values survey cross-national data-set. World Values Survey Dataset.

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these variables earlier. At the individual level, we measure if the respondent is a woman, given that preferences may differ between both sexes. Importantly, we include a multiplicative interaction between the country-level treatments and the indicator for women.

We estimate fixed-effects models with survey weights so that our samples are nationally representative. The inclusion of country-fixed effects guards against any confounder that relates to the country context and, as such, has been used in related research.[129]

We cluster standard errors by country.

Table 3. IMF tax conditionality and women's life chances in survey data

	S1	S2	S3	S4
Woman	0.014	0.016*	0.016	0.059
	(0.009)	(0.009)	(0.010)	(0.090)
IMFwt#Woman	0.069***	0.076**	0.048**	0.250*
	(0.020)	(0.030)	(0.020)	(0.137)
IMFwot#Woman	0.029	0.024	0.067*	–0.402**
	(0.027)	(0.042)	(0.040)	(0.158)
Observations	162,284	161,853	161,871	22,093
Countries	75	75	75	16
R-squared	0.150	0.186	0.152	0.068
p-value of F-test	0.206	0.300	0.656	0.001

Notes: Dependent variables are listed on top of each column. S denotes survey outcomes: S1 is food deprivation, S2 is income deprivation, S3 is health deprivation and S4 is household dissatisfaction. Country-fixed effects included. Standard errors clustered on countries in parentheses. Significance levels * p <.1, ** p <.05, *** p <.01

Our results are strongly consistent with our prior findings in that they suggest that IMF tax conditionality serves to undermine women's perceptions of key factors that shape their life chances (Table 3). For all three hardship outcomes, women report negative sentiment more often than men, particularly when the country has been under an IMF program with tax conditionality (IMFwt). Interestingly, we do not find such effects for IMF programs in general, as interaction effects between gender and these programs are less significant and less consistent. For the fourth outcome, we find that women are significantly less satisfied with the situation in their household under IMF tax conditionality. In contrast, they report being more satisfied – relative to men – when the government participated in an IMF program without tax conditionality (IMFwot). In sum, this analysis provides one more piece of evidence in support of the pernicious gendered effects of IMF tax conditionality.

6. Conclusion

We examine the gendered effects of the value added tax, one of the Global South's most crucial and widely implemented tax policy innovations in recent decades. Drawing on the feminist critique of structural adjustment programs, we provide a systematic analysis of these gendered effects. Using a sample of 147 countries in 1980-2016, we employed state-of-the-art causal inference methods to examine the variegated effects of VAT introduction on women's life chances relative to men's in terms of economic participation, education and health.

We find that if a country undergoes an IMF program with tax conditionality, women's life chances deteriorate relative to men's. To demonstrate the mechanism underlying these effects, we show a negative effect of IMF-induced de jure VAT adoption on women's life chances. Our findings hold against numerous robustness tests and alternative estimation methods addressing potential selection effects. We also provide complementary individual-level evidence from the World Values Survey based on 98 countries from 1981 to 2019. We show that during an IMF program with tax conditionality, women are significantly less satisfied with home life and report more material hardships compared to years under an IMF program without tax conditionality.

129. Reinsberg, B. and R. Abouharb (2023). Partisanship, protection, and punishment: How governments affect the distributional consequences of international monetary fund programs. Review of International Political Economy, 30(5), 1851-1879.

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We note that our study has some limitations. First, data availability on gendered outcomes is a key challenge. The extent of missing data across the various dimensions of women's life chances differs. This makes comparisons across these outcomes difficult. Missing data might also explain why we did not find consistently robust results on some of these outcome dimensions. Second, methods of causal inference are valid under certain assumptions that may not be fully met. Our approach was to rely on different methods that made the most plausible assumptions in our case. Where their results differ, we reported these differences but let readers ultimately decide which ones they trust more.

We emphasize that our findings do not imply that tax reform is the main or the only cause of negative gender outcomes under IMF programs. Nor do we assess the full welfare effects of tax reform. Rather, our goal is to highlight VAT introduction as one pathway through which conditionality can exert disproportionately negative effects on women relative to men.

Our results suggest a dilemma for governments. Many lower-income governments have faced pressure to lower trade barriers and corporate income taxes in a bid to harness the opportunities of economic globalization. The standard accompanying recommendation from international experts, including most prominently the IMF, is to broaden and widen the tax base through the introduction and augmentation of a VAT. However, these tax reforms have distributional implications that may adversely affect marginalized groups. Without complementary policy measures, our findings show that women suffer disproportionate hardships that bring adverse consequences for their life chances. The IMF – as a key driver of VAT introductions over the last decades – has exhibited awareness of the gendered consequences of its policy advice in general, but has paid less attention to tax policy in particular. Moreover, the institution is still far from fully mainstreaming and implementing a gendered perspective in its loan programs.[130]

From a policy perspective, our findings call for greater attention to the gendered effects of the IMF's tax policy advice. In particular, the IMF's preference against product- or enterprise-specific VAT exemptions, for example, should be further scrutinized. The efficiency advantages of a simple VAT design must be balanced against consideration of how VAT compliance costs differ for small enterprises (where women are disproportionately represented) as well as how increased taxation of certain products harms poor women-led households in particular. Recent working papers from the IMF are indeed studying how to address VAT regressivity[131] and how to mitigate its impact on low-income households.[132] Research and policy analysis on the concept of "gender budgeting" may also provide helpful insights in this regard, though more systematic study of the effectiveness of gender budgeting remains sorely needed.[133] Moreover, the most developed guidelines for gender budgeting come from organizations like the OECD, which deal with advanced economies.[134] Surveys of gender budgeting in developing-country contexts remain focused on selective countries.[135],[136] Future research should further develop best practices for applying gender budgeting to developing economy contexts marked by lower female labour force participation, higher poverty and a large informal sector.

Appendix

Table A1. Descriptive statistics

Variable	Observations	Mean	Std Dev	Min	Max
Women's labour force participation	3,870	53.521	18.793	6.26	91.83
Women's unemployment	3,741	10.07	8.727	0.149	47.183
Women's cardio-vascular disease	2,640	21.131	6.805	6	47.8
Girls' child mortality	5,508	69.072	59.441	2.3	336.9
Girls' primary enrolment	4,134	94.553	24.911	0	163.021
Girls' secondary enrolment	3,115	57.462	32.359	0	146.645
Women's tertiary enrolment	2,507	21.015	23.229	0	146.838

130. *See*, for example, an Oxfam Briefing Note on the gendered consequences of IMF programs in the Middle East and North Africa (Abdo, 2021).
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134. *See*, for example, https://www.oecd.org/gov/budgeting/gender-budgeting/.
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Variable	Observations	Mean	Std Dev	Min	Max
With tax conditionality	5,439	0.159	0.366	0	1
Without tax conditionality	5,439	0.189	0.392	0	1
VAT introduction	5,880	0.018	0.133	0	1
Total tax revenue	4,354	13.593	8.274	0.3	112.81
Financial crisis	5,460	0.056	0.23	0	1
Reserves in months of imports	3,721	4.257	4.531	0.027	79.237
GDP growth	4,548	5.203	15.721	–75.778	294.955
Inflation growth	3,738	–0.115	2.261	–10.746	10.682

Sample excludes high-income countries.

Table A2. IMF tax conditionality and women's livelihoods in all countries

	L1	L2	H1	H2	E1	E2	E3
With tax conditionality	–0.099**	0.093*	–0.002	0.001	0.093	–0.164	–0.361***
	(0.044)	(0.049)	(0.037)	(0.017)	(0.148)	(0.119)	(0.110)
Without tax conditionality	–0.042	0.121**	–0.021	–0.007	–0.015	–0.291***	0.056
	(0.048)	(0.056)	(0.038)	(0.014)	(0.107)	(0.097)	(0.107)
Observations	3,483	3,354	2,244	5,091	3,503	2,457	1,862
Countries	129	129	132	139	136	133	122
R-squared	0.402	0.504	0.507	0.998	0.700	0.568	0.584
p-value	0.312	0.898	0.563	0.342	0.213	0.671	0.095

Outcomes are in differences. Control variables include men-specific livelihood outcomes and two-way fixed effects. Standard errors clustered on countries in parentheses.

Significance levels * p <.1, ** p <.05, *** p <.01

Table A3: IMF tax conditionality and women's livelihoods

	L1	L2	H1	H2	E1	E2	E3
With tax conditionality	–0.065	0.070	0.022	–0.005	–0.112	–0.116	–0.328**
	(0.054)	(0.050)	(0.047)	(0.017)	(0.145)	(0.154)	(0.144)
Without tax conditionality	–0.022	0.117***	–0.010	0.003	0.006	–0.423***	0.073
	(0.061)	(0.042)	(0.046)	(0.014)	(0.116)	(0.159)	(0.109)
Financial crisis	–0.147	0.066	–0.036	–0.004	–0.173	0.189	–0.579**
	(0.100)	(0.073)	(0.065)	(0.022)	(0.177)	(0.188)	(0.234)
Reserves	–0.011*	–0.001	0.003	0.003	–0.001	0.006	–0.021
	(0.006)	(0.006)	(0.006)	(0.003)	(0.014)	(0.016)	(0.018)
Economic growth	–0.001	–0.001	0.001	0.000	0.000	0.003	0.001
	(0.001)	(0.001)	(0.001)	(0.000)	(0.003)	(0.003)	(0.004)
Inflation growth	0.004	–0.012	–0.001	0.002	–0.009	0.018	–0.014
	(0.007)	(0.011)	(0.007)	(0.001)	(0.029)	(0.020)	(0.020)
Observations	2,303	2,241	1,656	2,906	2,223	1,628	1,271

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	L1	L2	H1	H2	E1	E2	E3
Countries	110	110	112	115	110	103	97
R-squared	0.435	0.502	0.475	0.998	0.801	0.531	0.686
p-value	0.505	0.380	0.458	0.598	0.368	0.088	0.038

Outcomes are in differences. Additional control variables not shown include the men-specific livelihood outcomes and two-way fixed effects. Standard errors clustered on countries in parentheses.

Significance levels * p <.1, ** p <.05, *** p <.01

Table A4. IMF VAT conditionality and women's livelihoods

	L1	L2	H1	H2	E1	E2	E3
With VAT conditionality	–0.127**	0.025	0.090*	0.009	0.094	–0.239	–0.245**
	(0.064)	(0.050)	(0.054)	(0.022)	(0.219)	(0.152)	(0.112)
Without VAT conditionality	–0.070*	0.057	–0.005	0.000	0.012	–0.187**	–0.124
	(0.038)	(0.035)	(0.030)	(0.013)	(0.115)	(0.090)	(0.090)
Observations	3,741	3,612	2,508	5,369	3,694	2,589	2,000
Countries	129	129	132	139	136	133	122
R-squared	0.388	0.501	0.495	0.998	0.713	0.555	0.582
p-value	0.329	0.467	0.073	0.686	0.711	0.705	0.177

Outcomes are in differences. Control variables include men-specific livelihood outcomes and two-way fixed effects. Standard errors clustered on countries in parentheses.

Significance levels * p <.1, ** p <.05, *** p <.01

Table A5. IMF tax conditionality and women-to-men ratios of livelihood indicators

	L1	L2	H1	H2	E1	E2	E3
W/M ratios With tax conditionality	–0.127**	0.911	–0.088	–0.029	–0.088	0.012	–2.225**
	(0.057)	(0.772)	(0.176)	(0.026)	(0.161)	(0.236)	(0.893)
Without tax conditionality	–0.053	0.881	–0.175	–0.016	–0.157	–0.437*	–1.494
	(0.056)	(0.853)	(0.187)	(0.023)	(0.134)	(0.223)	(1.046)
Observations	3,354	3,225	2,112	4,952	3,394	2,383	1,786
Countries	129	129	132	139	136	133	122
R-squared	0.151	0.104	0.153	0.070	0.138	0.098	0.457
p-value	0.214	0.976	0.617	0.591	0.589	0.036	0.442

Outcomes are in differences and multiplied by 100 [%]. Two-way fixed effects included. Standard errors clustered on countries in parentheses.

Significance levels * p <.1, ** p <.05, *** p <.01

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Table A6. VAT introduction and gender outcomes using instrumental variables

	L1	L2	H1	H2	E1	E2	E3
VAT introduction	–8.987	11.993*	11.997*	–10.431**	–33.314*	–25.052*	–17.045
	(12.414)	(6.771)	(6.473)	(5.294)	(18.101)	(14.662)	(18.629)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,438	4,313	2,992	5,694	4,743	3,854	3,280
Countries	177	177	177	187	185	183	175
R-squared	–0.032	0.115	0.085	0.994	0.697	0.833	0.871
F-statistic	7.864	8.427	7.767	14.693	11.248	10.166	7.748

Notes: Dependent variables are listed on top of each column. L captures labour market outcomes, H is related to health outcomes, and E represents education outcomes. Control variables include the men-specific outcome, IMF programs without tax conditionality, and total tax revenue. Standard errors clustered on countries in parentheses.

Significance levels * p <.1, ** p <.05, *** p <.01

Table A7. Mediation analysis: IMF tax conditionality, VAT introduction and women's livelihoods

	L1	L2	H1	H2	E1	E2	E3
Outcome equation With tax conditionality	–0.115**	0.046	0.075	–0.335	0.750***	–0.473***	–0.477***
	(0.050)	(0.064)	(0.048)	(0.223)	(0.228)	(0.178)	(0.143)
VAT introduction	0.161**	0.049	0.051	0.060	0.051	–0.256	0.138
	(0.073)	(0.139)	(0.071)	(0.278)	(0.672)	(0.390)	(0.308)
Without tax conditionality	–0.066	0.101	0.033	0.185	0.082	–0.621***	0.296**
	(0.048)	(0.067)	(0.041)	(0.255)	(0.185)	(0.140)	(0.129)
VAT introduction With tax conditionality	0.015*	0.019**	0.018**	0.023***	0.028***	0.033***	0.027**
	(0.009)	(0.009)	(0.009)	(0.008)	(0.009)	(0.010)	(0.011)
Without tax conditionality	0.000	0.002	0.006	0.010*	0.013*	0.020**	0.009
	(0.007)	(0.008)	(0.007)	(0.006)	(0.007)	(0.008)	(0.009)
Observations	3,483	3,354	2,244	5,091	3,816	2,884	2,268

Outcomes are in differences. Control variables not shown include the lagged level of the outcome, men-specific livelihood outcomes and two-way fixed effects. Standard errors clustered on countries in parentheses.

Significance levels * p <.1, ** p <.05, *** p <.01

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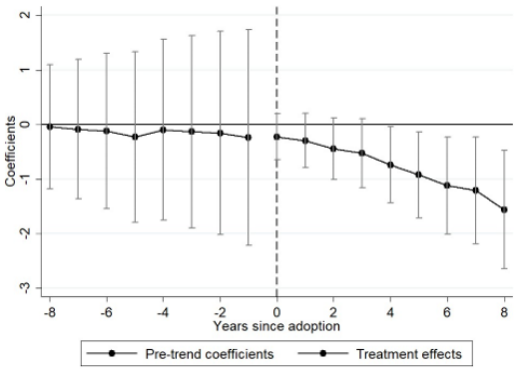
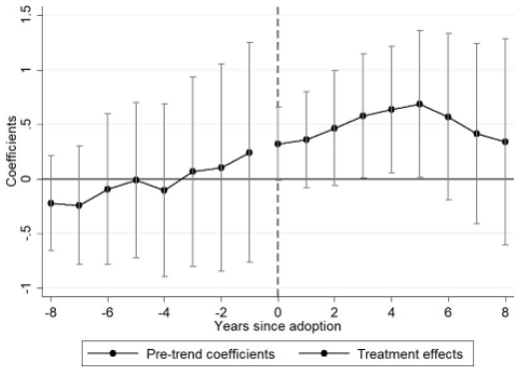
Figure A1. VAT adoption and women's life chances



(a) Women's labour force participation



(b) Women's cardio-vascular disease prevalence

Outcomes with insignificant treatment effects suppressed. All estimates shown with 95% confidence intervals.

Table A8. Balance tests: how representative is the WVS sample?

	Mean value by sample		
Variable	**Non-WVS sample**	**WVS sample**	Δ
IMF program with tax conditionality	0.116	0.152	0.036
IMF program without tax conditionality	0.142	0.148	0.006
Women's labour force participation	55.663	53.745	–1.918
Women's unemployment	9.593	9.840	0.247
Women's cardio-vascular disease	18.881	16.400	2.486*
Women's primary enrolment	96.171	101.194	5.023*

Significance level: * $p < 0.05$

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