Changes to Youth Suicide Rate Trends by Province in Canada (1950-2019) as Indicative of Major Social Structural Shifts

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Abstract

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The study of suicide remains predominantly psychocentric and individualistic, often overlooking social dimensions. This thesis presents a sociological analysis of suicide as a crucial complement to individualistic approaches. Male and female suicide rates are analysed for the period spanning 1950 to 2019, by Canadian province, with a particular focus on youth suicide. A descriptive analysis highlights the simultaneous emergence of youth suicide across all provinces as of the 1960s. While rates for both sexes rose in unison, female youth suicide rates continued to rise through to 2019, whereas rates for males generally plateaued at a new 'normal'. Previously nearly non-existent, youth suicide has since matched or exceeded rates in traditionally higher-risk age groups.

An age, period, and cohort (APC) analysis was subsequently conducted to model temporal trends using the APC-Interaction model. The findings indicate notable estimated cohort effects, with increased suicide risks for males born between 1960-1974 and females born after 1985. These results underscore the need for a sociological perspective in suicidology, demonstrating how social forces shape suicide trends. Without a sociological perspective, suicide is framed as almost exclusively an individual act, overlooking broader socio-historical influences. By mapping youth suicide trends across all Canadian provinces over seven decades, this study addresses a critical gap in the literature.

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Chapter 1: Introduction

Se suicider, c'est la manière ultime d'imaginer; vouloir exprimer le suicide en termes réalistes de suppression, c'est se condamner à ne pas le comprendre: seule une anthropologie de l'imagination peut fonder une psychologie et une éthique du suicide. Retenons seulement pour l'instant que le suicide est le mythe ultime, le «jugement dernier» de l'imagination, comme le rêve en est la genèse, l'origine absolue.[1]

Okay, let's do it, let's do the drugs, let's do the
chemical lobotomy, let's shut down the higher
functions of my brain and perhaps I'll be a bit more
fucking capable of living.
Let's do it.
[…]
It is done
    behold the Eunuch
of castrated thought[2]

[1] Michel Foucault, *Dits et écrits : 1954-1988, Tome I (1954-1969)* (Paris: Gallimard, 1994), 51.
[2] Sarah Kane, *4.48 Psychosis* (London: Bloomsbury Methuen Drama, 2014): 19 & 40.

This thesis attempts to bridge the gap between quantitative methods and the social forces that impact the lived realities of people that choose to commit suicide. The data span 70 years from 1950 to 2019, covering 10 provinces, and thousands of suicides.[3] Realistically, the individual experience is lost in the aggregate. There is no personal, there is no individual, there are only rates, coefficients, and slopes. That said, the emergence of youth suicide was a simultaneous event across all provinces beginning in the 1960s, indicating the presence of social forces acting upon individuals to varying degrees. As will be demonstrated, these social forces permeated the complexities of everyday life, shaping how youth envisioned their future.

Suicide rates began to change dramatically in Canada as of the 1960s. Youth began to commit suicide at alarming rates and eventually surpassed older age groups who were traditionally considered the 'at-risk' population. Further, youth as of the 1960s continued to post high rates of suicide as they aged, indicating the possibility of cohort effects. Crucially, suicide rates among youth never returned to their 'normal' even after rates flattened out, with some provinces seeing continued increases into the 2000s, and especially among females.

Emile Durkheim's theory on suicide has continued to hold incredible influence on how suicide is studied in sociology. At the time of the writing of *Le suicide* and up until the 1960s, suicide rates followed a relatively linear path with age. Suicide rates would increase with age and peak in older age groups. Durkheim's research also showed that this pattern was present across multiple countries at the time of the monographs initial publication.[4] Durkheim wrote, that "[The] character [of suicide] is not to appear at a definite moment in life but to progress steadily from age

[3] For the statistical analysis, New Brunswick, Nova Scotia, Newfoundland and Labrador, and Prince Edward Island were grouped together as the Atlantic Provinces.
[4] Émile Durkheim, *Suicide: A Study in Sociology*, ed. George Simpson, trans. John A. Spaulding (New York, NY: The Free Press, 1951), 101.

to age."[5] Suicide, according to Durkheim's analysis culminates at the "final limits of human existence.", in older age groups.[6]

The increase in youth suicide rates experienced in Canada during the 1960s and its continued persistence has challenged Durkheim's age-specific suicide claims. Christian Baudelot and Roger Establet detail changes to the traditional Durkheim curve with data on the nineteenth and twentieth century spanning multiple countries, arguing that:

> *Le dernier quart du XX^e siècle a bouleversé une relation que plus de cent cinquante ans de statistiques mondiales avaient incité à considerer commee une donnée universelle : la croissance régulière du taux de suicide avec l'âge. […] Et puis, voilà qu'au cours des années 1970 cette belle institution vielle d'un siècle et demi se dérègle brutalement sous les coups d'un double mouvement : le suicide des jeunes augmente, celui des personnes âgées diminue.*[7]

What then, caused this historic shift in youth suicide across all provinces in the 1960s that previously followed a 'traditional Durkheimian curve'? What structural shifts led to a sudden and continued increase in youth suicide, that broke an over century-old pattern of suicide in the Western world?

As will be shown, most research on suicide is done in the psy-related fields and falls within a psychocentric paradigm. This paradigm can be highly individualistic in its causation, focusing on risk factors related primarily to mental health disorders, substance use, and biological determinants in the form of neuro-chemical imbalances and genetic markings. Since 1980, sociological perspectives have made up approximately 2% of published research on suicide, where

[5] Ibid., 102.
[6] Ibid.
[7] Christian Baudelot and Roger Establet, *Suicide: l'envers de notre monde* (Paris: Éditions du Seuil, 2006), 135-138.

approximately one third are published in psychiatry journals.[8] Largely, sociological perspectives are underrepresented in the field of suicidology and yet it is best suited to answer this shift in suicide in Canada that occurred simultaneously across provinces.

This thesis follows relatively the same premise as Durkheim theorised over a century ago: does the fact that suicide emerged among youth simultaneously across provinces (and also across multiple Wester countries) in the 1960s not indicate that it is at least, in part, a product of social forces? Like the age regime that Durkheim had posited with the mirrored suicide rates across provinces, "Does not this prove that the cause of the variations of suicide cannot be a congenital and invariable impulse, but the progressive action of social life?"[9] Whereas the pressures of an intruding modernity were perhaps felt most by adults and elderly at the time of Durkheim's writing, this thesis finds that youth in the second half of the twentieth century were faced with shifting institutions that deeply impacted their "social life" and how they perceived their future. The formerly 'progressive action' as a social force was and is currently felt in the development stage of youth.

The difference between the traditional suicide regime and the emergence of youth suicide cannot be understated. How is that what Durkheim referred to as a "tendency [that] grows incessantly from youth to maturity", faced with a "collective force impelling men to kill themselves" that "gradually penetrates them." through "repeated experiences" suddenly become *immediately* lethal between 15 and 24 years old as of the 1960s?[10] The concern is not just the alarming rise in youth suicide rates, but the fact that a previously gradual increase has become abrupt.

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[8] Steven Stack and Barbara Bowman, *Suicide Movies: Social Patterns 1900-2009* (Cambridge, MA: Hogrefe, 2012), 3-4.
[9] Durkheim, *Suicide: A Study in Sociology,* 102.
[10] Ibid., 324-325.

This thesis will cover changes to the family, employment, marriage, divorce, and fertility that affected how youth perceive their future. These changes were brought on by major shifts in social relations related to Capitalism, as defined by Mark Fisher in *Capitalist Realism* (and covered in the Theoretical Framework) that are interlinked and multimodal. Within this context of precarious change, this thesis will also explore gender relations and how these classic Durkheimian variables impacted male suicide rates to a greater extent, even though females witnessed an increase in rates. It is my argument that men were deeply impacted by changes to their position within these institutions, with an increase in the labour participation of women, and shifts within the family through divorce, later marriages, and a reduction in fertility rates. Further, the traditionally male-dominated employment realm was significantly affected by deindustrialization and changes in labor practices. In all, these changes may have severely impacted how men and women conceptualise traditional stepping-stones into adulthood.

The focus in this thesis will be on the sex at birth of the decedent as this is how the data were collected by coroners and recorded in the Canadian Vital Statistics Deaths (CVSD) database. A gender variable does not reliably exist in this database. Consequently, the terms male and female will be used throughout this thesis to refer to the suicidees by their identified sex at birth and for all discussion related to suicide rates. Genders such as man or woman will be used in this thesis for all discussion related to gender relations. Unfortunately, non-normative genders will not be discussed as there is no record of gender in the CVSD and suicides within these communities cannot be effectively analysed at such a macro-level.

Nunavut, Yukon, and the Northwest Territories will be excluded from this thesis for two notable reasons. (1) The data available for the 'territories' are incomplete for many period and age categories, and the cohorts for Nunavut would be incomplete for this study as it was only officially

separated from the Northwest Territories in 1999. In multiple cases, the data for the territories have extreme outliers such as a suicide rate of 232.6 per 100,000 for males aged 60-64 in 1992 in Yukon (the suicide rate for males across Canada was 23.2 per 100,000 for the same period and age group), and with some extending to 1,000 per 100,000 due to a small population and comparatively high number of suicides.[11] These inconsistencies will greatly impact the statistical analysis. (2) Secondly, the reality of suicide is intrinsically different in the territories compared to the provinces because of the high proportion of Indigenous peoples that populate the region. Indigenous and non-Indigenous suicide are two very different phenomenon. Indigenous suicide necessitates its own research/theses/dissertations/monographs/journal articles, from actors who are embedded and/or highly knowledgeable of the communities and history.

Suicide as an area of research is faced with a challenging research problem. Simply put, the decedent cannot be interviewed. Thus, we are left with individuals that attempted suicide and survived, those that have had suicidal ideation(s), and the family/friends/close contacts of those that took their own lives. In addition, we also have access to statistics that may indicate a pattern to the suicidal behaviour of a population as influenced by social forces. As will be shown in the methodology, statistics that are collected on deaths by suicide may be underreported and this is especially so for women and marginalised groups and populations. No less, a statistical perspective gives the researcher the ability to map socio-historic factors that may have larger generational impacts on groups of individuals and importantly, sociological implications. This is the goal of my thesis, to present data on suicide rates and highlight potential age, period, and cohort effects in Canada to study the emergence of youth suicide and its possible continued presence. In other

[11] Expert Working Group on the Revision and Updating of the Original Task Force Report on Suicide in Canada and Canada, eds., *Suicide in Canada: Update of the Report of the Task Force on Suicide in Canada* (Ottawa: Health Canada, 1994).

words, what may have marked its emergence and why it has not reverted to existing suicide patterns.

The sociological perspective on suicide that I will adopt is premised on age, period, and cohort effects (APC). The APC model studies temporal phenomena and looks to structural determinants to explain social forces. In the APC model, age is a look at events that affect a demographic or subset of a population because of their age; period effects are often linked to wide-ranging historic moments that affect all age groups; and cohort effects are linked to behavioural similarities among individuals born within or around the same year, with these idiosyncrasies playing out over their lifetime.[12] The term cohort always refers to birth cohorts for this thesis unless specified otherwise.

The study of cohorts provides a useful analytical tool to study transformative events between cohorts at a critical age – in this case, the formative years of youth – that act over their lifetime.[13] Norman B. Ryder put it best, "The minimal basis for expecting interdependency between intercohort differentiation and social change is that change has variant import for persons of unlike age, and that the consequences of change persist in the subsequent behavior of these individuals and thus of their cohorts."[14] Thus, social forces will be interpreted differently by different cohorts and their interpretive lens can persist throughout their lifetime.

The use of age, period, and cohort analyses provides the researcher and future researchers with preliminary findings that point to areas of interest and possible causality. Many APC theorists warn against drawing too large of a conclusion due to ongoing flaws with the classical APC model.

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[12] Lise Thibodeau, "Suicide Mortality in Canada and Quebec, 1926-2008: An Age-Period-Cohort Analysis," *Canadian Studies in Population [ARCHIVES]* 42, no. 3–4 (September 23, 2015), 2.
[13] Liying Luo and James S. Hodges, "The Age-Period-Cohort-Interaction Model for Describing and Investigating Inter-Cohort Deviations and Intra-Cohort Life-Course Dynamics," *Sociological Methods & Research* 51, no. 3 (August 1, 2022): 1167.
[14] Norman B. Ryder, "The Cohort as a Concept in the Study of Social Change," *American Sociological Review* 30, no. 6 (1965), 844.

The model I have chosen, the APC-Interaction Model – which I will elaborate on in the Methodology and Data section – provides a workaround against falling for the same arbitrary assumptions found in most APC models. No less, the conclusions I present will be estimates and as such, limited, in accordance with prior literature and because research on APC models is still evolving and ongoing. Clifford Clogg argues that the APC model is best used to isolate areas of research requiring further depth and analysis. He writes:

> Cohort analysts have been careful to note that age, period, and cohort are merely indicators of other variables which actually 'cause' the observed variation in the dependent variable under study. The age-period-cohort framework is properly interpreted as an accounting scheme, not a 'causal model,' but we hasten to add that the proper application of this framework enables a deeper analysis of proximate causal mechanisms.[15]

We see a similar perspective from Norval D. Glenn, who advises caution providing estimates of cohort effects. He writes,

> The method may prove to be useful, however, if it yields approximately correct estimates "more often than not," if researchers carefully assess the credibility of the estimates by using theory and side information, and if they keep their conclusions about effects tentative.[16]

As such, my thesis aims to both shine the light on areas of sociological importance as well as challenge and inform current understandings of suicide. There is a dire need to study the emergence

[15] Clifford C. Clogg, "Cohort Analysis of Recent Trends in Labor Force Participation," *Demography* 19, no. 4 (November 1, 1982), 460.
[16] Norval D. Glenn, Cohort Analysis, 2nd ed, Quantitative Applications in the Social Sciences 07–005 (Thousand Oaks, Calif: Sage Publications, 2005): 20.

of youth suicide in the 1960s as contemporary youth suicide has persisted at higher levels and even continued to rise for many provinces.

The current paradigm of suicidology is ill-equipped in capturing social forces as acting on individuals and contextualising contemporary suicide trends. With a focus on structural changes, this thesis will provide empirical evidence to the simultaneous emergence of youth suicide across every province. This alone, is proof akin to Durkheim's of the necessity of sociology in the realm of suicide studies. Following, the presence of cohort effects beginning among youth will be demonstrated, with differences between males and females. Lastly, necessary socio-historical context will be provided as a starting point for future researchers wanting to theorise the early beginnings of youth suicide.

Chapter 2: Literature Review

2.1 Suicide as Pathological

The dominant study of suicide – suicidology – is premised on both psychopharmacology and suicide prevention through the analysis of risk factors, sometimes mutually exclusive. Important to both and as will be detailed below, is the attempt to remove suicide from human life without understanding its symbolic socio-historical significance. The disregard afforded to its symbolic meaning is to silence its existence and those that have committed suicide; it is to remove suicidees from their social, historical, and cultural context by essentialising their experiences within pre-set categories of mental illness and leading risk factors. Suicide is more than a death with individualistic psychocentric factors. Suicide stripped of its historical, social, and existential dimensions cannot grasp the political and the systems of knowledge and power that surround it.

There are two dominant perspectives to the psychopharmacological lens: psychopathology and pharmacotherapy.[17] Psychopathology places suicide as a pathological mental health problem caused almost in totality by mental illness.[18] The latter finds biological determinants to suicide in the form of genetic and chemical abnormalities.[19] Dominant forms of research for both premise their work on a causal link between mental illness(es) and suicide that is taken for granted and universalised globally throughout the world. The result of this amalgamation is its crystalisation within an ideology of psychocentric knowledge production. As Matt Wray et al. succinctly write, biomedical and psychiatric perspectives have "become paradigmatic", and tend to "neglect social and ecological determinants or include them only in superficial and cursory ways."[20]

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[17] Ian Marsh, *Suicide: Foucault, History and Truth* (Cambridge University Press, 2010), 6-7.
[18] Ibid., 33.
[19] Ibid.
[20] Matt Wray, Cynthia Colen, and Bernice Pescosolido, "The Sociology of Suicide," *Annual Review of Sociology* 37, no. 1 (August 11, 2011), 506.

Paul Grell writes in *Adolescence et suicide* that suicide is almost exclusively a mental health issue for some suicidologists; suicide is associated with "*la dépression et* […] *l'impulsivité*."[21] There is both no other explanation for suicide and there is agreed upon consensus that non-mentally ill people do not commit suicide. Some researchers such as Michel Tousignant or the Centre de recherche de l'Hôpital Douglas go so far as to paint suicidee's without mental health issues as anomalies and their suicides, inexplicable.[22]

Psychocentric forms of knowledge production premise their work as positivistic and see suicide as inherently pathological.[23] Ian Marsh, in "The Social Production of Psychocentric Knowledge in Suicidology" uses a Foucauldian lens in contextualising psychocentric knowledge as borne out of a biopolitical rationality.[24] Marsh puts it best, suicide "represents a failure of power to preserve life, and further, it is a waste of life – the loss of an asset to power, and in the final analysis, a tragedy."[25] As such, Marsh ties the association of the inherently tragic and pathological self-accomplished death with larger structural forces aiming to preserve life for productive ends. This lens is productive in creating a disciplined suicidal subject that is defined and self-defined in relation to psychocentrism.

The causal relationship between suicide and mental health disorders is politicised as a new form of discipline. Marsh posits that neoliberalism exploits the psyche with subjects willingly and sometimes passionately engaging in self-exploitation by internalising power relations in a regime that demands of them a constant personal self-optimisation.[26] Self-optimisation is the maintenance of a 'healthy' psyche that allows for continued production and thus, productivity is relegated to the

[21] Paul Grell, *Adolescence Et Suicide* (Paris, France: Berg international éditeurs, 2015): 18.
[22] Ibid., 18-19.
[23] Ian Marsh, "The Social Production of Psychocentric Knowledge in Suicidology," Social Epistemology 34, no. 6 (November 1, 2020), 546.
[24] Ibid., 549.
[25] Ibid.
[26] Ibid.

efficiency of the individual. The failure to achieve or maintain self-optimisation is a personal failure rather than a systemic or political problem. As Marsh writes, "Within a psychopolitical regime, by means of psychocentric framing, what could be understood as social injustice instead gets atomised and internalised as individual illness."[27] Neoliberal forms of power attempt to create productive members of society by optimising their mental health to the rhythm of capital production. Doing so, Marsh highlights how psychocentric forms of knowledge depoliticise mental health and internalise it as an individual problem.

Parallels can also be drawn with the power relations between the self-optimisation of the mind and psychoactive pharmaceuticals. How we think about, produce knowledge on and through, one method of treating mental health disorders is filtered through a highly individualistic lens. Nikolas Rose argues that psychiatric practices, such as the prescription of selective serotonin reuptake inhibitors (SSRIs), can be tools of social control that shape behaviour.[28] The pharmaceutical industry has influenced how we medicalise everyday life and changed our understandings of normalcy and emotional regulation.[29] The use of pharmaceuticals is another method, perhaps a principle method, in constructing a 'normal' subject that is consistently productive. Although SSRIs and other pharmaceuticals can be a useful treatment for many, it can imply that human emotions are an impediment to the demanding neoliberal capital production standards demanded from individuals. Further, how these production standards are internalised, perceived, and reproduced.

[27] Ibid., 551.
[28] Nikolas Rose, "Psychiatry as a Political Science: Advanced Liberalism and the Administration of Risk," *History of the Human Sciences* 9, no. 2 (May 1, 1996).
[29] David Healy, "Shaping the Intimate: Influences on the Experience of Everyday Nerves," *Social Studies of Science* 34, no. 2 (April 1, 2004).

2.1.1 Psychological Autopsies

The compulsion of mental health causality is (re)produced in how suicidologists gather data through psychological autopsies. Psychological autopsies provide one of the most important types of evidence base for suicide prevention and risk factors. A psychological autopsy is the process of interviewing individuals that were close to the suicidee such as friends or family, or as Kenneth R. Conner et al. in "Introducing the Psychological Autopsy Methodology Checklist" label as "proxy respondents (ie., *informants*)" or survivors (emphasis is my own).[30] A semantic analysis of the use of "informants" – the same for Séguin et al. (2006) – or 'survivors' is of great interest but outside the scope of this thesis.[31]

Conner et al. state, the methodology of the psychological autopsy is to look for risk factors such as "mental disorders, stressful life events, physical illness burden, access to lethal means including firearms and pesticides", with mental disorders being the most widely reported factor.[32] André Gagnon et al. write, "The psychological autopsy has been the research method of choice for understanding the individual and the events leading up to the suicidal act."[33] Point being, all of the suicidal behaviour antecedents are individual in nature, do not necessarily touch upon larger social determinants, and essentialise the suicidee's actions – suicidee's *must* have a mental disorder. There is no or little reflexivity, even though it is plainly obvious that most individuals suffering from mental disorders do not have suicidal ideations or commit suicide, and to think otherwise would be to attach a *modus operandi* to a large swath of the population. In fact, *surveiling* friends and family for mood and mental disorders is a tenet of suicide prevention methods.

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[30] Kenneth R. Conner et al., "Introducing the Psychological Autopsy Methodology Checklist," *Suicide and Life-Threatening Behavior* 51, no. 4 (August 2021): 673.
[31] Are individuals that committed suicide suspected criminals? Crimes against life? Against the living, leaving survivors of their brutality in the wake of their death?
[32] Conner et al., "Introducing the Psychological," 673.
[33] André Gagnon et al., "Youth Suicide: A Psychological Autopsy Study of Completers and Controls," *Vulnerable Children and Youth Studies* 4, no. 1 (March 19, 2009): 14.

The use of psychological autopsies has also become a globalised practice with a similar set of assumptions. Marsh finds that the psychological autopsy has crossed international borders and found its way in countries such as Taiwan where scholars such as A. T. A. Cheng assume the presence of mental disorders in psychological autopsies in the same manner as Séguin et al..[34] Marsh states that "evidence of mental illness was uncovered by the researchers, even though such illnesses were not discussed in the interviews".[35] Both examples point to the universalisation of the psy-dominant paradigm. As it pertains to Cheng though, it clearly indicates the underlying assumptions present in psychological autopsies, mental health disorders must be found. Suicidology is attuned to a compulsory ontology of pathology that fails to understand the symbolic meaning of suicide and (re)produces knowledge even when evidence to the contrary is present.

Psychological autopsies also look to secondary factors such as substance use, limited socio-demographic variables, and access to prevention methods. Séguin et al. found that 85 of their 102 subjects were men, more than half of their sample had a substance use disorder (especially alcoholism), were aged between 30 and 59 years, were unemployed, and most tended to not have a high level of formal education.[36] They argue that their findings stress the need for better treatment for substance use and mental health treatment.[37] Further, that the emphasis on specialised mental healthcare should be applied nationwide in Canada.[38]

These findings are echoed in Alain Lesage et al. in "Systematic Services Audit of Consecutive Suicides in New Brunswick: The Case for Coordinating Specialist Mental Health and

[34] Marsh, *Suicide*, 40-41.
[35] Ibid.
[36] Séguin et al. "Suicide Cases in New Brunswick," 583-584.
[37] Ibid., 585.
[38] Ibid.

Addiction Services" wherein they highlight the faults in mental health and addiction services.[39] Specifically, addiction services were little used, with only 4% seeking help from addiction specialists in their last year while 85% had used mental health services.[40] Essentially, more suicides could have been prevented by having greater access, awareness, and proactivity to continuity of care.[41]

Most psychological autopsy articles repeat *ad nauseam* that 90% or a similar number of suicidee's suffered from some psychiatric disorder at the time of their deaths. André Gagnon et al. in "Youth suicide: A psychological autopsy study of completers and controls" also refer to the 90% statistic in their literature review.[42] Their results agree with past research that psychiatric diagnoses are a major risk factor, in addition to substance use.[43] In a separate study, Alain Lesage et al. find in "Implementing a Suicide Audit in Montreal: Taking Suicide Review Further to Make Concrete Recommendations for Suicide Prevention" that more than half had a substance use disorder and that over two-thirds suffered from depression or some form of a psychological disorder.[44] Further, and in tandem with all the prior literature on psychological autopsies, greater public awareness is needed for the effects of depression and substance use on suicide, and that specialised care exists.[45]

Articles such as Allison Milner et al.'s "Suicide in the absence of mental disorder? A review of psychological autopsy studies across countries" amplifies the centrality of mental disorders as a risk factor. Milner et al. review international psychological autopsy research that found an

[39] Alain Lesage et al., "Systematic Services Audit of Consecutive Suicides in New Brunswick: The Case for Coordinating Specialist Mental Health and Addiction Services," *The Canadian Journal of Psychiatry* 53, no. 10 (October 1, 2008): 674.
[40] Ibid.
[41] Ibid., 676.
[42] Gagnon et al., "Youth Suicide: A Psychological," 14.
[43] Ibid., 19.
[44] Alain Lesage et al., "Implementing a Suicide Audit in Montreal: Taking Suicide Review Further to Make Concrete Recommendations for Suicide Prevention," *Archives of Suicide Research* 27, no. 1 (January 2, 2023): 34.
[45] Ibid., 37-38.

absence of mental disorders in suicide deaths and re-evaluated them on the possible conditions of attenuated disorders such as personality and sub-threshold conditions or mild mental disorders.[46] Their findings point to a need to better understand cultural and philosophical differences in how non-Western people express mental disorders and behaviours, to better include them into DSM classifications. More importantly, their research shows that suicides without obvious mental disorders are abnormal. A psychological disorder *must* exist.

2.1.2 Risk Factors

Risk factor scholars sometimes get so close to studying structural social forces and politicising suicide. In a separate article, Milner et al. study the effects of involuntary job loss as a suicide risk.[47] When adjusted for socio-economic and confounding variables, involuntary job loss was not a significant risk factor.[48] Rather, the analysis turned back to mental disorders as having a magnitude increase in suicide and attempted suicide risk, compared to no diagnosis.[49] No less, the interest in involuntary job loss amplifies the consistent focus on impulsive and mentally unstable behaviours. Further, they looked at differences in socio-economic conditions and concluded that those in lower socio-economic brackets had greater odds-ratios for mental disorders, but the same comparison was not made for involuntary job loss – failing to tie job loss to prevailing precarity.[50]

The same is seen for Timothy J. Classen and Richard A. Dunn in "The effect of job loss and unemployment duration on suicide risk in the United States: a new look using mass-layoffs and unemployment duration". Among the risk factors mentioned above, the authors want to study job

[46] Allison Milner, Jerneja Sveticic, and Diego De Leo, "Suicide in the Absence of Mental Disorder? A Review of Psychological Autopsy Studies across Countries," *International Journal of Social Psychiatry* 59, no. 6 (September 2013). 545.
[47] Allison Milner et al., "The Effects of Involuntary Job Loss on Suicide and Suicide Attempts among Young Adults: Evidence from a Matched Case–Control Study," *Australian & New Zealand Journal of Psychiatry* 48, no. 4 (April 2014).
[48] Ibid., 337.
[49] Ibid.
[50] Ibid.

loss as a suicide risk and found it to not be a significant factor.[51] Rather, the risk of committing suicide is not significant in the period immediately following job loss.[52] More importantly though, they find that "sociological forces could be at play" for mass layoffs affecting entire towns after a major employer shuts down operations.[53] That said, Classen and Dunn do not mention the possibility of sociological forces for mid- to long-term unemployment, or the intersections of employment, race, ethnicity, socio-economic status, immigration status, and far more, and how that may impact unemployment at an individual level. What is interesting to this thesis is how economic peripheries or 'Monotowns' relate to Paul Grell and Daniel Dagenais' scholarship discussed below, and to deindustrialisation.

Generally, the risk factors that were found through the psychological autopsies all point to individualised factors and a negation of the symbolic meaning of suicide. Whether it is substance use or psychological disorders, it is focused on the individual. Granted, there is some discussion regarding the accessibility of treatment centers, but the problem and solutions rarely stray beyond providing aid and reprieve at the individual level, even though this is important. There is little discussion on systemic problems that touch social and cultural determinants. Further, no paradigmatic publications (that I know of) question the causal link between mental illness and suicide risk, it is taken for granted. Lastly, the spread and consolidation of psy-dominant discourse impacts non-dominant perspectives.

[51] Timothy J. Classen and Richard A. Dunn, "The Effect of Job Loss and Unemployment Duration on Suicide Risk in the United States: A New Look Using Mass-Layoffs and Unemployment Duration," *Health Economics* 21, no. 3 (March 1, 2012), 338.
[52] Ibid., 339.
[53] Ibid., 347.

2.1.3 Critiques of the Psychological Autopsy and Risk Factors

Three main critiques of the psychocentric paradigm will be presented. Heidi Hjelmeland et al. argue in "Psychological Autopsy Studies as Diagnostic Tools: Are They Methodologically Flawed?" that there are multiple methodological flaws in psychological autopsies. Mainly, that they do not guard against interview bias, that they are functioning within a medico-paradigm that often seeks to concur with previous research (as was mentioned above), and the time difference between the suicide and the moment of interview with the 'informants' is problematic, leading to lapses in memory and confirmation bias.[54]

Secondly, there are questions regarding the importance and centrality of the mind when researching suicide. Katrina Jaworski argues in "The Gender-ing of Suicide" that the suicide subject is *a priori* assumed to be the origin of the intention to die, and the intention is assumed to come from a disembodied agentic mind.[55] Jaworski argues that "While the naming of suicide requires a body, that body also appears as ontologically secure. It is a neutral and self-evident biological absent presence that yields the evidence of suicide. Yet despite the necessity of the body, it is as if suicide transcends the body. Put simply, suicide is all in the mind."[56] At its core, Jaworski posits that suicide has its *a priori* status because it is materialised in masculine conditions of knowing that privilege the mind over the body.[57] Hence, in part, why there is so much emphasis on afflictions that impact the perceived sound reasoning of the mind and that suicidology is so focused on individual therapeutics.

[54] Heidi Hjelmeland et al., "Psychological Autopsy Studies as Diagnostic Tools: Are They Methodologically Flawed?," *Death Studies* 36, no. 7 (August 2012): 607.
[55] Jaworski, "The Gender-ing of Suicide," 51.
[56] Ibid.
[57] Ibid., 52.

Jaworski's critique of the current paradigm takes precedence over their culturalist approach to understanding suicide for this thesis. There is clearly, as is shown, a primacy afforded to the mind in how suicidologists study suicide. Through this mind-centered analysis comes a focus on the individual and on individualised factors. Even when social factors are discussed in the suicidology publications above, the discourse always returned to questions of individual nature. Of course, this then leads to individualised remedies with surveillance, tracking of individuals through support centers and statistics, and pharmacological therapies.

Lastly, in the same journal as Aujard – *Recherche sociographique* (2007), a review dedicated to the sociological understanding of suicide as a critique of suicidology – Gilles Gagné and David Dupont provide a discourse analysis of early suicidology studies to map the emergence of its technico-scientific ontology. Notable to their work is the persistent theme of challenging the dominance of risk factors in suicidology discourse. They argue that risk factors have replaced the intentionality and actions of persons contemplating suicide and reduced them to a unit of life.[58] The study of risk factors grew out of a want to prevent suicides and to prove to bureaucrats and politicians that their methods were efficacious and importantly, fiscally responsible.[59]

The discourse on cost-effectiveness is seen at its most blatant with Dale Clayton and Alberto Barcelo estimating the "cost estimate per suicide" in 1996 in New Brunswick.[60] The same is seen in other studies to varying degrees and precision, such as T. J. B. Dummer et al. (2010) for Nova Scotia, Mark Anielski (2001) for Alberta, or Ashleigh Dalton et al. (2014) for Toronto. Clayton and Barcelo's calculations are based on "potential years of life lost" and "discounted future

[58] Gilles Gagné and David Dupont, "Les changements de régime du suicide au Québec, 1921-2004," *Recherches sociographiques* 48, no. 3 (2007), 36.
[59] Ibid., 33.
[60] Dale Clayton and Alberto Barcelo, "The Cost of Suicide Mortality in New Brunswick, 1996," *Chronic Diseases in Canada* 20, no. 2 (1999), 89.

earnings", the former being ambulance, hospital, physician, autopsy, and funeral services.[61] The latter looks to years of lost production and consumption had they not committed suicide.[62] But, it does not consider the reality of their suicide and reduces them to a dollar figure in a political economy that prioritises financial incentives and cost-cutting.

Suicide as an amalgamation of risk factors fails to accommodate for what Gagné and Dupont detail as a symbolic act. They posit that "*Cette vue peut certes permettre à notre société de continuer à réprouver le suicide, mais elle ne nous autorise pas à remplacer l'intention de l'acteur par l'action d'un facteur*."[63] It is this intention that is most important to the study of suicide; an intention that is often ignored as it is assumed that suicidee's are 'not in their right mind', but which provides the richest of detail once extrapolated to social factors.

The meaning of a suicide is concretised *sine qua non* once we begin to think beyond the level of suppression. As exemplified by the excerpt from Sarah Kane's moving theatre piece, suppression is central when they refer to pharmacological therapy as "[shutting] down the higher functions of my brain", as a "chemical lobotomy", or the unnamed main character as a "Eunuch / of castrated thought".[64] Moreover, Kane's writing illustrates how the character subsumes notions of suppression in how they describe themselves. It is this crucial and deeply human layer of meaning that is lost when we think in terms of suppression; as Foucault put it in the opening quote, "*vouloir exprimer le suicide en terme réalistes de suppression, c'est se condamner à ne pas le comprendre*".[65]

[61] Ibid., 90-91.
[62] Ibid.
[63] Gagné and Dupont, "Les changements de regime," 41.
[64] Kane, *4.48 Psychosis*, 19 & 40.
[65] Foucault, *Dits et écrits,* 51.

2.2 APC Studies on Canadian Suicide

Scholarship using APC analysis or studies regarding generational effects on suicide in Canada were not found in abundance (or I was unable to find them). Further, many of the studies are dated and no study reaches beyond 2009 suicide statistics. The studies often highlight the predominance of male suicide through a 'sex-ratio' – which is not inherently flawed – but it is often used to emphasise the importance of studying male over female suicide. Lastly, from the publications that I have found, none provide a recent APC analysis on a per-province basis beyond Québec and Ontario, and even these studies are dated.[66]

Richard Violette's master's thesis argues that cohort aged 20-24 in 1975-1979 "*gave birth* to youth suicide" (emphasis his) and continued to record new and historically high numbers throughout their lifespan.[67] This trend is evidenced through their data and graphical displays that portray a cohort tendency to province-wide youth suicide statistics.[68] Nevertheless, as it pertains to specific provinces, their focus remains on Québec and Ontario. Additionally, although the assertions of a cohort effect are remarkable, they lack explanation, and its veracity must be measured as no statistical significance was tested.

Violette's documentation of a cohort effect leads to an analysis focused primarily on males with the use of the sex-ratio. The utilization of the sex-ratio – male to female – skews attention towards the greater 'offending' party, in this case males that may elide the study of female suicide. Violette's thesis points out that while female suicide rates rise alongside male suicide during the

[66] By recent I am also referring to the APC models used, as many are simply descriptive statistics and graphical analysis if not outdated models.
[67] Violette, "Contemporary Suicide in Canada," 103.
[68] Ibid., 104-105.

same period, they remain lower than male rates.[69] Though, female suicide has a larger magnitude increase in some cases, for certain provinces and age groups, as will be shown below.

Janie Reed et al. look at five-year birth cohorts between 1921 and 1980, nation-wide. Their data and analysis pre-dates the bulk of the emergence of youth suicide recorded after the 1950s and cannot properly assess the generations who inaugurated youth suicide.[70] Their use of cohort analysis is an attempt to decipher generation specific changes following the Great Depression and World War Two.[71] Male and female cohorts aged 15 to 19 and 20 to 24, beginning in 1951 and 1961 break away from earlier cohorts and are seen to post higher suicide rates than their predecessors.[72] The authors seem to be pointing to the precursor of youth suicide, prior to their statistical significance in later years. Published in 1985, Reed et al. acknowledge that suicide rates for younger cohorts may increase, and we can confirm today, that they indeed have. Although Reed et al. present data for both males and females, their conclusion points to a need to further research social determinants for male youth suicide. This conclusion, as will be shown in the Results below, is categorically short-sighted – female suicide may not have the same high-levels of suicide as males, but it nonetheless increased at a fulgurant rate.

Frank Trovato's journal article "Suicide in Canada: A Further Look at the Effects of Age, Period and Cohort" does not cover the entire period of the emergence of youth suicide (it considers suicide up to 1981-1985) and is quasi-irrelevant as it does not cover youth suicide. Frank Trovato counters Reed et al's. argument concerning their use of birth cohorts as significant to the study of suicide trends. Rather, Trovato finds that age and to a lesser extent, period effects, are better

[69] Ibid., 109.
[70] Janie Reed, Joan Camus, and John M. Last, "Suicide in Canada: Birth-Cohort Analysis," *Canadian Journal of Public Health / Revue Canadienne de Sante'e Publique* 76, no. 1 (1985): 43.
[71] Ibid.
[72] Ibid., 46.

parameters for analyzing suicide trends for both males and females.[73] The analysis also attempts to connect suicide rates to major historical events such as the Great Depression or World War Two, and employment, divorce, gender, and urbanisation.[74] Their methodology is dubious as they do not account for the collinearity of APC when running a multiple regression. In addition, the editor themselves warrants caution, writing that Trovato's "statistical manipulations troubled reviewers as much as they troubled me."[75]

Similarly dated publications are seen for Ontario and Alberta. Mark Solomon and Charles Hellon use age- and sex-specific suicide rates for Alberta between 1951 and 1977. They argue that the suicide rates of the cohorts they mapped increased as it aged, for both men and women. Their analysis is purely descriptive and offers no statistical analysis. Further, and as they mentioned, the period they covered was too narrow to map cohorts. That said, their results indicate the inception of youth suicide in Alberta for both men and women.[76]

The cohort study for Ontario by Rosemary Barnes et al. also used a descriptive analysis of suicide rates between 1877 and 1976 and argued that the biggest change may not be associated to cohort adherence but rather a general increase up to the age of 60.[77] Their data were not sex-disaggregated and thus, does not indicate differences between the sexes. They find that suicide rates have generally increased in Ontario, and this is especially so for youth in the 1970s.[78] In addition, the increase in suicide rates for people aged 10 to 35 is juxtaposed by a decrease for the

[73] Frank Trovato, "Suicide in Canada: A Further Look at the Effects of Age, Period and Cohort," *Canadian Journal of Public Health / Revue Canadienne de Santé Publique* 79, no. 1 (1988): 37–44.
[74] Ibid., 41.
[75] Ibid., 44.
[76] M. I. Solomon and C. P. Hellon, "Suicide and Age in Alberta, Canada, 1951 to 1977. A Cohort Analysis," *Archives of General Psychiatry* 37, no. 5 (May 1980), 512.
[77] Rosemary A. Barnes, Jon Ennis, and Renate Schober, "Cohort Analysis of Ontario Suicide Rates, 1877–1976," *The Canadian Journal of Psychiatry* 31, no. 3 (April 1, 1986), 212.
[78] Ibid., 210.

elderly.[79] Thus, finding a commonality with Alberta suicide trends and that of Québec. That said, they do not cover the entire period for the emergence of youth suicide and their combined male-female dataset does not do justice to the intricacies between male and female suicide trends.

Ira M. Wasserman found no significant cohort effect for Canadian data between the years 1926 and 1981 in "Age, Period and Cohort Effects in Suicide Behavior in The United States and Canada in The 20th Century".[80] Further, their analysis indicates that no substantial period effects exist for Canada for the same period.[81] With that said, Wasserman does indicate a drastic increase in youth suicide between the years 1926 and 1981. It is also interesting to note that the data presented in the results and discussion pertains almost exclusively to males. There is only one unrelated mention of 'female' in the literature review.[82] Once more, Wasserman's work is dated but no less indicates a need to study the emergence of youth suicide and possible cohort effects beginning in the 1970s and 1980s.

Lise Thibodeau refreshes Reed et al., and Trovato's analysis. Thibodeau interprets their findings through Durkheim's framework of integration and regulation.[83] In accordance with Violette, Thibodeau finds the greatest changes among suicide rates in Canada's young males.[84] However, in divergence, Thibodeau seeks to study the baby boomer generation as matching the "modernisation" period seen in Canada during the middle to second half of the twentieth century.[85]

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[79] Ibid., 208.
[80] Ira M. Wasserman, "Age, Period and Cohort Effects in Suicide Behavior in the United States and Canada in the 20th Century," *Journal of Aging Studies* 3, no. 4 (December 1989), 307.
[81] Ibid.
[82] Ibid., 297.
[83] Lise Thibodeau, "Suicide Mortality in Canada and Quebec, 1926-2008: An Age-Period-Cohort Analysis," *Canadian Studies in Population [ARCHIVES]* 42, no. 3–4 (September 23, 2015), 4.
[84] Ibid., 10.
[85] Ibid., 12-13.

By extension, Thibodeau questions the implication of the "modernisation" period in relation to former traditional modes of socialization such as the family, marriage and religion.[86]

Their focus turns to Québec, in which they highlight the increase in youth suicide – more than the rest of Canada – from 1966-1970 to 1991-1995.[87] Further, they contradict other suicide cohort scholars – Gilles Légaré and Denis Hamel - that found "no obvious cohort effect on the variation in suicides over the past 60 years", between 1950 and 2009.[88] Thibodeau argues that cohort effects exist for the male cohorts after World War II up to 1976.[89] Women displayed very little cohort effects following World War II but Thibodeau found statistically significant cohort effects for those born in 1981-1985.[90]

Légaré and Hamel find that suicide rates rose rapidly in Québec between 1950 and 1970, stabilised in the 1980s, and began to rise again in the 1990s and then declined.[91] The rates fluctuated most dramatically for men, with the period 1970-1989 seeing an increase in suicide for men aged 20 to 24, followed by adult men in the 1990s and early 2000s.[92] Cohort effects were visible almost exclusively for men, and only for those born between 1870 and 1909, and 1950 and 1979.[93] Even though this may indicate the presence of a cohort effect beginning in the 1970s, Légaré et al. argue that cohort effects had little impact on suicide rates in contradiction to their own results.[94] Rather, age was of greater importance for women and period for men as they fit

[86] Ibid., 14.
[87] Ibid.
[88] Thibodeau, "Suicide Mortality in Canada," 16.; Gilles Légaré and Denis Hamel, "An Age-Period-Cohort Approach to Analyzing Trends in Suicide in Quebec Between 1950 and 2009," *Canadian Journal of Public Health / Revue Canadienne de Santé Publique* 104, no. 2 (2013): 122.
[89] Ibid., 13-14.
[90] Ibid., 14.
[91] Légaré and Hamel, "An Age-Period-Cohort Approach," 119-120.
[92] Ibid., 120.
[93] Ibid.
[94] Ibid., 121.

better with suicide prevention tactics.[95] Rate variations in the 1995 to 1999 period varied more than all other periods over the previous six decades, and show a significant period effect with a record number of suicides.[96] They conclude that prevention methods should look to age effects (specific age groups) and other prevailing risk factors rather than specific cohorts.

Thibodeau's intrinsic estimator (IE) model, although popular among some APC scholars, is disputed, complex, prone to user bias, assumes a constant cohort effect through a cohort's lifespan, and does not solve the identification problem.[97] As Viktor Orri Valgarðsson argues, the IE method, in addition to similar methods such as the hierarchical age-period-cohort models, can obscure assumptions (not necessarily with intention) due to its complexity.[98] Valgarðsson writes that the assumptions are "therefore less transparent and less likely to be substantively justified, even if they can have large and unpredictable consequences."[99]

Unlike Thibodeau, Légaré and Hamel use Katherine M. Keyes and Guohua Li's multiphase APC method to estimate cohort effects for suicide trends. To measure nonlinear cohort effects, Keyes and Li's model also makes the false assumption that cohort effects are constant throughout their lifespan, with a now disputed APC model that does not properly isolate the A, P, and C variables. Further, the age and period variables are measured visually through a graphical inspection in Légaré and Hamel, without statistical testing. There is also issue with how they do not assign any period effects to females. As will be shown in the Results, females also experienced period effects in the same was as males, at the same time and across every province.

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[95] Ibid.
[96] Ibid.
[97] Andrew Bell, "Introducing Age, Period and Cohort Effects," in *Age, Period and Cohort Effects: Statistical Analysis and the Identification Problem*, ed. Andrew Bell (London New York: Routledge, Taylor & Francis Group, 2021), 5; Ethan Fosse and Christopher Winship, "Analyzing Age-Period-Cohort Data: A Review and Critique," *Annual Review of Sociology* 45, no. 1 (July 30, 2019): 476-477.
[98] Viktor Orri Valgarðsson, "The Recession Generation? Age-Period-Cohort Dynamics of Political Trust in Six Countries Severely Affected by the 2008 Crisis," *Frontiers in Political Science* 6 (February 29, 2024), 4.
[99] Ibid.

Both methods focus on a single coefficient to determine if a cohort had higher rates of suicide compared to other cohorts. Doing so, neither study can ascertain if the cohorts suicide rates increased, decreased, or were maintained throughout their lifetime. Unlike these two models, and as will be discussed in the Methodology and Data section, the APC-Interaction model used herein can measure lifetime cohort adherence. Thus, the APC-I model is capable of a more nuanced approach to cohort effects that does not focus solely on how much one cohort deviates from other cohorts. As will be shown in the Results, most cohorts born after 1950 had higher than average suicide rates, but these deviations were mostly the product of high suicide rates among youth that gradually diminished as the cohort aged.

APC studies on suicide in Canada have not been brought up to date with more recently developed models that better handle the identification problem. Further, most provinces have either not been measured or not been measured in at least a decade. There is little consensus on the presence of cohort effects when they are estimated, but there is consensus on the emergence of youth suicide as of the 1950s. Lastly, sex-disaggregated analysis is sometimes lacking even when the data are available, which can pose a serious problem as will be shown in the following section.

2.3 Female Suicide and the (White) Gender Paradox

Researchers point to a Gender Paradox present in suicidology and suicide studies in general. The paradox finds that although females experience higher levels of suicidal ideation and suicide attempts (nonfatal suicide behaviour), males have higher rates of completed suicide.[100] Some assume that the difference in suicidal behaviour is a natural attribute of Western and even global suicidal behaviour and universalised as such.[101]

[100] Silvia Sara Canetto and Isaac Sakinofsky, "The Gender Paradox in Suicide," *Suicide and Life-Threatening Behavior* 28, no. 1 (March 1998): 1.
[101] Silvia Sara Canetto, "Women and Suicidal Behavior: A Cultural Analysis.," *American Journal of Orthopsychiatry* 78, no. 2 (2008): 259.

Some changes to the sex-ratio have already been noted by Laurence J. Kirmayer, and Robin Skinner and Steven McFaull. Suicide rates for male youth aged 10 to 19 between 1980 and 2008 have fallen while those for female youth have risen, with female youth having the highest positive average annual percent change.[102] Further, there was a significant change in suicide methods used by females, with a decrease reported in poisonings in exchange for a surprising increase in suffocation.[103] Indicating that suicidal female youth are using more lethal methods which may partly explain why female youth suicide rates are increasing.

Scholars such as Jaworski find that there are numerous presumptions as it pertains to suicidal behaviour that are subsequently taken for granted and shape the discourse surrounding suicide studies. Jaworski argues that Western suicide is performative. Leaving aside questions of agency that are not raised by the author, Jaworski posits that social and cultural norms may impact the perception and choices an individual makes when attempting suicide.[104] As Jaworski states, the discursive environment that surrounds suicide research assumes that the act and intentions are not novel and are simply re-enactments of cultural and social norms. She writes, "suicide can be seen to be a re-enactment and a re-experience of meanings already established as signifying self-destruction. Suicide is produced via re-enactment in that it cites what is already culturally established as suicide, accessible to the individual engaging with the act."[105] A culturalist approach to suicide may elide the sociological underpinnings of suicide by focusing on individual actions over social forces. Further, it assumes that 'culture' is subsumed and acted upon at relatively equal levels across a social group, and is equally dispersed and uniform.

[102] Robin Skinner and Steven McFaull, "Suicide among Children and Adolescents in Canada: Trends and Sex Differences, 1980–2008," *CMAJ* 184, no. 9 (June 12, 2012), 1031.
[103] Ibid.
[104] Jaworski, The Gender-ing," 52-53.
[105] Ibid., 54.

Female suicide is mostly overlooked in APC studies. APC studies often focus on a 'sex-ratio' that seek to compare individuals that committed suicide based on their biological sex at birth. The issue being – on top of the limitations that biological sex may have such as ignoring the importance and intricacies of gender, keynoting social and cultural identity – the sex-ratio is dominated by male-only studies or studies that use females simply as a comparative subject.[106] Thibodeau states that "Most analyses in that context (APC) focused exclusively on males, neglecting changes in the suicide rate among females."[107] Sharon Mallon et al. argue that women are situated as the 'other' in APC studies, in the sense ascribed by Simone de Beauvoir in *The Second Sex*.[108] A sex-ratio perspective can also be deceiving in the aggregate, as will be shown in the Results.

The issue lies not only in APC studies, but also in psychological autopsies and suicidology in general. Mallon et al. state that they found only one peer-reviewed article that had a female-only psychological autopsy study.[109] Kathy McKay et al. argue that a lot of focus has been placed on the epidemiology, motivation and social determinants of male suicide, while little attention has been focused on female suicide and its social determinants.[110] More importantly, their findings suggest that suicide rates between the sexes varies greatly between regions in the world. Some Western countries have near-even female-male suicide ratios, and regions such as the Western-Pacific and South-East Asia are female-dominated.[111] Further, much of the research on suicide

[106] Sharon Mallon et al., "An Exploration of Integrated Data on the Social Dynamics of Suicide among Women," *Sociology of Health & Illness* 38, no. 4 (May 2016): 662-664; Leah Shelef, "The Gender Paradox: Do Men Differ from Women in Suicidal Behavior?," *Journal of Men's Health* 17, no. 4 (September 30, 2021): 26.
[107] Thibodeau, "Suicide Mortality in Canada," 3.
[108] Mallon et al., "An Exploration of Integrated Data," 663.
[109] Ibid., 664.
[110] Kathy McKay, Allison Milner, and Myfanwy Maple, "Women and Suicide: Beyond the Gender Paradox," *International Journal of Culture and Mental Health* 7, no. 2 (February 18, 2013): 8.
[111] Ibid.

stems from Western or high-income countries even though an estimated 73% of suicides occur in low-income countries.[112]

The importance of this cannot be understated, a gender data gap exists and continues to impact social and political policy, and the everyday life of women.[113] As Caroline Criado-Perez indicates in *Invisible Women: Data Bias in a World Designed for Men*, the impacts of not sex-disaggregating data are pervasive throughout all aspects of a woman's life. These range from urban planning decisions, such as the design of city transit systems to medicine and pharmacology.[114] These often-dangerous oversights, with many more detailed in Perez's monograph, are all because data on women either does not exist, is not sex-disaggregated, and/or was (un)wittingly ignored. Sex-disaggregating suicide statistics is of great importance as it informs public policy decisions and is subsequently reflected in everyday experiences.

There is no questioning as to if the variables age, period, and cohort best explain female suicide. Further, if the common Durkheimian explanation for suicide as the disruption of integration/regulation through changes in marriage, divorce, employment, or religion are sufficient to explain female suicide. Durkheim's analysis was mostly used to study male suicide and have been repurposed sometimes without much oversight. One study on Québec found that during the period 1931 to 1986, divorce, "no religion", unemployment, and childlessness had an impact on male suicide, whereas only divorce had an impact on female suicide rates – indicating that common Durkheimian variables may not best explain suicide for females.[115]

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[112] Qingsong Chang, Paul S.F. Yip, and Ying-Yeh Chen, "Gender Inequality and Suicide Gender Ratios in the World," *Journal of Affective Disorders* 243 (January 2019): 303.
[113] Caroline Criado-Perez, *Invisible Women: Data Bias in a World Designed for Men* (New York: Abrams Press, 2019), 25.
[114] Ibid., 29-30.
[115] Catherine Krull and Frank Trovato, "The Quiet Revolution and the Sex Differential in Quebec's Suicide Rates," *Social Forces* 72, no. 4 (June 1994), 1142.

Employment seems to provide 'protective' qualities for females. Michael Ornstein found that married females of all ages had lower suicide rates if they were employed, in British Columbia between 1969 and 1973.[116] Indicating that marriage may have been a precipitating factor, reversing the role of the family for female suicide. Further, that employment was a 'protective factor' for all marital statuses, except for 'single' females above 65 years old.[117] Even so, single employed females had higher predicted suicide rates than 'married', 'divorced', and 'widowed' categories. Essentially, employment in the context of the second half of the twentieth century seems to have benefited females. Though, caution is always advised for these studies, as the meaning and significance of variables such as employment and marriage and change over time. Therefore, they may (and do) have differing impacts on suicide rates over time.

These variables are all used to study female suicide but may not actually answer the pressing question of this thesis: what lead female youth to commit suicide as of the 1960s? If not cohort allegiance, then what? If there are age and/or period effects, do shifts in employment, deindustrialisation, and modernisation provide part of the answer? If they do, how do they differ from men? What other sex-disaggregated variables might answer why female youth commit suicide? More research is required to better explain female suicide and its intricacies.

2.4 Youth Suicide

Although the authors mentioned above cannot agree on the presence, severity, or lack thereof age, period and cohort effects in Canadian suicide, they all point to the emergence of youth suicide beginning in the 1960s and 1970s. As Wasserman indicates, "the Canadian suicide rate for those 15-19 went from 1.8 per 100,000 in 1926 to 21.2 in 100,000 in 1981, a 1178% increase".[118] The

[116] Michael D. Ornstein, "The Impact of Marital Status, Age, and Employment on Female Suicide in British Columbia," *Canadian Review of Sociology/Revue Canadienne de Sociologie* 20, no. 1 (1983), 99.
[117] Ibid.
[118] Wasserman, "Age, Period and Cohort Effects," 300.

use of a percentage of that size is hyperbolic to a degree (the suicide rate in 1981 was 12 times larger than in 1926), but it effectively translates the emergent increase of youth suicide rates. In 1974, suicide accounted for 9% of deaths for Canadian youth aged 15 to 24 but it increased to 23% of deaths by 2009.[119] In the same year, suicide was the second leading cause of death for Canadians aged 15 to 34.[120] The same trend is also seen for U.S. data, with a dramatic, previously unknown increase in suicide rates for individuals aged 15 to 24 in the late 1960s and early 1970s.[121] In all cases, the data point to an important shift in what can be labelled as 'traditional' suicide patterns, as it pertains to Durkheim's seminal work.

Most APC research on suicide provides a Durkheimian theoretical framework that informs the statistics. Durkheim's theory on suicide held that suicide rates increased with age on the precept that individuals will experience an accumulation of life's difficulties.[122] As Thibodeau writes, "In this framework, the risk of suicide lies outside the individual (not in nature or biology), increasing with time spent in society as collective forces gradually impel people to kill themselves.", due to factors of integration and regulation.[123] This pattern was maintained for approximately a century and a half after Durkheim's *Le suicide* and became known as 'suicide law' in tandem with the typology.[124] It is with major changes to this patterning that youth suicide gained notoriety and by extension, the need to understand this change.

Durkheim's diagnosis of industrial shifts in Western societies is reformulated in Paul Grell's work. This time, in neoliberal and capitalistic disruptions affecting youth, and not exclusively

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[119] Manitoba Office of the Children's Advocate, *Manitoba's Changing Face of Suicide and the Narrow Window for Intervention: Phase One Report: A Special Report*, 1 online resource (18 pages): colour illustrations vols. (Winnipeg, Manitoba: Manitoba Office of the Children's Advocate, 2015), 6.
[120] Shabbir Amanullah et al., *Suicide and Mental Health in Prince Edward Island: 2002-2011* (Charlottetown, PEI: Document Publishing Centre, 2013), 4.
[121] Wasserman, "Age, Period and Cohort Effects," 300.
[122] Thibodeau, "Suicide Mortality," 2.
[123] Ibid.
[124] Ibid.

males. The oppressive nature of capitalism and neoliberalism are omnipresent in most of Grell's publications. They fundamentally impact the everyday life of how youth can come to conceptualise a future and push them towards reckless behaviour and suicide.

The premise of *Adolescence et suicide* is to understand the symbolic meaning behind a suicidee's actions within a society that oppresses their very being.[125] Grell constructs an "*anthropologie de l'imagination*" through the 35 interviews of Acadian youth living in New Brunswick to make sense of the symbolic worlds that they have created within a precarious context. This precarious world is present within ordinary circumstances, "*C'est bien de l'ordinaire de la vie que surgit le tragique contemporain*."[126] More importantly, Grell argues that suicide and 'reckless' behaviour is a means to derive meaning and understanding in a world that is inhospitable. They are courageous acts reached through imagination, a belief that what lays beyond death is better than their current circumstances. To commit suicide is to "*arracher à la mort une autre vie [qui] conforme à sa propre vision des choses*", an attempt to capture Foucault's "*mythe ultime […] de l'imagination*".[127]

Youth suicide in Acadian regions is largely tied to their being in an economic periphery. The "*Réalité malheureusement banale en Acadie*" is one that is largely documented and mostly ignored, and fully within the realm of anomic and egoistic suicide.[128] Grell argues that youth are living within a contradiction of hyper-consumption and weak employment/salaries, leading to disillusionment and consequently, banalisation of everyday life.[129] The transition from adolescence to adulthood is perilous in a world where employment is necessary and equally uncertain. As Grell

[125] Grell, *Adolescence et suicide*, 7.
[126] Ibid., 34.
[127] Ibid., 58.
[128] Paul Grell, "Jeunes Acadiens en situation de précarité : des blessures qui marquent les corps et les esprits," *Francophonies d'Amérique*, no. 15 (2003): 49.
[129] Ibid.

puts it, "*les jeunes dont il est question ici n'ont pour ainsi dire jamais eu de « jeunesse» et sont projetés très tôt dans la vie*".[130] Essentially, there is no ritual or symbolic moment in youth that signifies entry into adulthood. Additionally, typical stability found in employment is no longer certain, with a lack of regulation and increased individualism brought on by capitalist virtues. Grell argues that youth in Acadia are consciously constrained in this paradox, it is the "*conscience d'être intégré et assujetti à des choses intolérables qui leur sont infligées dans une indifférence quasi généralisée*."[131] This leads to a slow destruction of the self in which their existence is purely monetary and uncertain.[132]

The emphasis afforded to the meaning of "life stepping-stones" is echoed in much of Daniel Dagenais' work. Dagenais ties the symbolic meaning of youth suicide to the anomie felt in the "crumbling" of the family and marriage institutions.[133] Dagenais finds that the foundational institutions of family and marriage no longer provide a basis for youth to advance into adulthood. The issue lies with a lack of support for individuals in finding a means to enter adulthood when the previously common ritual of marriage and starting a family are no longer commonplace.[134] Grell's critique of capitalism and neoliberalism, and Dagenais' own call forth a sociological understanding of self-accomplished deaths that fosters an understanding of suicide by grasping its meaning beyond the realm of individualistic risk factors. They find that shifts in major social institutions have left youth without a clear path forward and without proper substitutes.

Dagenais provides added context to the *déambulation existentielle* felt by youth through field work that he conducted in Abitibi-Témiscamingue. Briefly touching upon it in the above article

[130] Paul Grell, "Mouvement et sentiment de l'existence chez les jeunes précaires," *Cahiers internationaux de sociologie* n° 117, no. 2 (2004): 239.
[131] Ibid., 104.
[132] Ibid., 105-106.
[133] Daniel Dagenais, "Suicide des jeunes et crise de la famille: la question de l'anomie," *Neuropsychiatrie de l'Enfance et de l'Adolescence* 55, no. 5–6 (September 2007), 338.
[134] Ibid., 343.

but later expounded in "Le suicide des jeunes : une pathologie du devenir adulte contemporain", is the absurdity of employment in economic peripheries, in the face of shifting marriage and family institutions.[135] Dagenais details a typology of three types of suicide in Abitibi-Témiscamingue: (1) young men pursuing an obsolete masculinity, (2) people aged 24 to 25 who actively refuse to become adults, and (3) people aged 17 to 18 who fear becoming adults.[136] All three revolve around Durkheim's concepts of anomie and fatalism but the first type will be detailed here. The pathological, obsolete masculinity that Dagenais details was intrinsically linked to employment that was no longer stable and being the head of a household, in economic peripheries that often consisted of resource extraction jobs, such as mining and logging.[137] It was men in their early 20s "*qui construisent leur identité de genre d'une manière qu'ils savent être sans avenir.*", with the understanding that their pursuit of traditional masculine ideals were detrimental to their wellbeing.[138] Thus, their suicide symbolised a protest of sorts against a path of life no longer viable and an alternative that was not easily accessible in a morphing capitalist landscape.

Dagenais argues that industrial labour in Abitibi was primarily a male gambit in futility. Industrial labour outside urban centers had "*des emplois, typiquement industriels et typiquement masculins*" that had "*aucun sens".*[139] These types of employment in the classic Durkheimian sense of anomie were counterbalanced by the family. Changes to the family, according to Dagenais, deeply impacted how men working typical industrial jobs perceived their existence.[140] Largely, deindustrialisation and major capitalist disruptions destabilised traditional modes of entering into

[135] Ibid.
[136] Daniel Dagenais, "Le suicide des jeunes : une pathologie du devenir adulte contemporain," *Recherches sociographiques* 52, no. 1 (April 18, 2011), 73.
[137] Daniel Dagenais, "Le suicide comme meurtre d'une identité," *Recherches sociographiques* 48, no. 3 (2007), 148-149.
[138] Ibid.
[139] Dagenais, "Suicide des jeunes et crise de la famille: la question de l'anomie," 343.
[140] Dagenais, "Le suicide comme meurtre d'une identité," 148-149.

adulthood, where founding a family was part and parcel of masculinities and helped regulate male anomic labour. Although this may help explain the rise of suicide rates among males in industrialised regions, it does not account for increases in female suicide rates that were of equal magnitude (as will be shown in the Results). If anything, it amplifies the crisis of identity experienced by men and masculinities within a context of shifting male hegemony. The Discussion section will further explore the impact of these shifts on suicide.

There is overlap between Dagenais and Grell in terms of their adhesion to Durkheimian aspects of anomic and fatalistic suicide. Both authors expand on Durkheim's fatalistic suicide, with Grell being more explicit. Their work on youth suicide centers on the lack of control youth have on their future. Whether it be shifts in masculinities, disruptions to traditional life stepping-stones, and/or economic precarity, both authors continuously point to the lack of control due to major changes in social institutions in the second half of the twentieth century and into the twenty-first. Youth as of the 1960s lost, in part, their historical waypoint, as Grell argues that "*Le suicide fataliste serait d'abord le résultat d'une rupture de l'horizon du possible*".[141]

What sets Dagenais' post-mortem and Grell's interviews apart from a psychological autopsy is how they premised their interviews. Firstly, both of their approaches were phenomenological. They both looked to the suicidee's lived experience to recreate their symbolic worlds. Doing so, both scholars found meaning in the suicidee's actions as pertaining to their social contexts. Large structural shifts in employment and the family led to increases in suicide, but mostly for males. This highlights a problem in the existing literature: the current research on suicide applies mostly to males. The larger number associated to the rate gets more attention, and understandably.

[141] Ibid., 101.

Nevertheless, the increase in female youth suicide is not insignificant either. The shifts are simply found elsewhere, as will be shown below.

Suicide as a symbolic act representing absurdity or contradiction is central to the articulations of Gagné and Duponts journal article "Les changements de régime du suicide au Québec, 1921-2004", referenced above. For them, the symbolic act of suicide in the second half of the twentieth century is derived from its "*non sens*".[142] It is a perception of a future that Gagné and Dupont pinpoint in the inter-related transformation of employment and the family.[143] The shift in employment occurred through the redefinition of labour from supplying a regulative effect as a prescribed institution in terms of pay-rates or advancements in conjunction with pensions and unions, to a highly-individualised neoliberal economy of uncertainty.[144] Likewise, family structures had adopted demographic practices that aligned with the former employment regime and were subsequently impacted with the individualisation of labour practices.[145]

Individualism also spread to all aspects surrounding the family and employment, and fragmented paths of life that were previously incorporated under their umbrella. The place of employment became a 'way of life' in itself separate from the family.[146] Thus, allowing individuals to pursue "[*des*] *parcours partiellement indépendants les uns des autres et abandonnés de plus en plus largement aux choix individuels et à l'influence des circonstances*."[147] By the same stroke, the family effectively switched from being the center of a life and society to an element of an individual's life - the choice that an individual makes rather than a collective norm.[148] Therefore,

[142] Gilles Gagné and David Dupont, "Les changements de régime du suicide au Québec, 1921-2004," *Recherches sociographiques* 48, no. 3 (May 2008), 41.
[143] 42
[144] 43-44
[145] Ibid., 44.
[146] 47
[147] Ibid., 44.
[148] Ibid., 47.

creating a gulf of anomie between employment and the family, mostly affecting men as seen in the higher rates of male youth suicide.

Gagné and Dupont adopt this theoretical framework in their analysis of youth suicide rates in Québec. The shift in suicide patterns for males in Québec – from the classic Durkheimian curve to a scenario where 20-year-olds had suicide rates equal to or higher than 60-year-olds – occurred over roughly a decade.[149] For females, this transition was more gradual but just as impactful.[150] As such, the sex-ratio expanded with the explosion in youth suicide.[151] Gagné and Dupont argue a combination of factors for the spike in male youth suicide, where entering into adulthood was delayed significantly through employment uncertainty and starting a family was no longer a given.[152] Therefore, echoing largely the works of Grell and Dagenais as it relates to changes to the family and employment brought on by neoliberal practices. Female youth, rather, took part in an emancipatory project of employment and individualism outside the family.[153]

Gagné and Dupont also briefly touch upon the role of religion and religious institutions in Québec society prior the *Révolution tranquille* and the impact of its delimiting as of the 1960s. Up to the 1960s, Gagné and Dupont argue that the Catholic Church played a classic Durkheimian role in creating community and 'protecting' people from suicide.[154] The Church also played a crucial role in the family, defining ethics and morality, and parental/children roles.[155] Through this, and in consequence, rapid secularisation shifted how youth could conceptualise their future within the family as of the 1960s.

[149] Ibid., 50.
[150] Ibid., 50.
[151] Ibid., 55.
[152] Ibid., 56.
[153] Ibid., 55.
[154] Ibid., 59.
[155] Ibid., 59.

Although the precarity of male youth is emphasised due to shifts in traditional institutions, little discussion is had on how these institutions were male dominated with major changes linked to shifting gender relations. A common theme among these authors, particularly in the works of Dagenais, and Gagné and Dupont, is the disappearance of traditional life pathways for male youth. The shifts in the family, marriage, religion, and employment can be characterised as changes to the hegemony of men in the public and private sphere. These changes in power relations may have deeply impacted how male youth conceptualise their future under shifting circumstances, with a reduction in power and superiority. As will be presented in the discussion, the second half of the twentieth century is largely documented with women disrupting the public sphere by entering the labour market and with greater freedoms found in the family and marriage (amongst other things).

Grell, Dagenais, and Gagné and Dupont politicised the lived experience of the decedent. This is consequential as it breaks from the suppressive ontology commonly seen in suicidological analysis. The symbolic meaning of suicide was placed within an economic and political context of precarity and exploitation. Whereas Gagné and Dupont, and Dagenais explored themes of shifting family, masculinities, and marriage institutions, both Grell and Dagenais touch upon aspects of economic precarity and risky behaviour within a capitalist society. Lastly, they all provided instances of suicide that were not psychocentric and tragic – it was a 'humanistic' approach, in its simplest (and hopefully, non-problematic) sense.

These authors were largely detailing the difficulties faced by Baby-Boomers and the generations that followed. The Baby-Boomer generation, entering youth and young adulthood in the 1960s up to the 1980s were part of a numerically large cohort. Fred Pampel and John Williamson argue that larger cohorts can intensify competition among youth for limited resources,

potentially harming their education, employment opportunities, and financial success.[156] Further, the large Baby-Boomer cohorts were coming of age during major changes to the family structure during a period of industrial transformation and cuts in social welfare, leading to a precarious position among youth as of the 1950s.[157] A premise that largely echoes the authors above, with changes in employment and the family, in a context of increased competition.

Pampel and Williamson studied the aggregate of 18 high-income nations (Canada being one) between 1955 and 1994 and posit that youth advantage – youth as traditionally 'protected' from suicide – narrowed over the decades of their study for male youth and to a lesser degree for female youth.[158] Meaning, that suicide rates between youth and older age groups that previously followed a traditional Durkheimian curve gradually lost this defining marker. More specifically though, Canada had the smallest youth advantage of the 18 nations surveyed, for both males and females, amplifying the severity of the crisis of youth suicide as of the 1960s.[159]

Males in the Baby-Boomer and Generation X were particularly vulnerable to changes in the family institution. The cross-analysis of age group size and changes to the family structure was significant only for male suicide.[160] There were negative consequences to family changes (i.e. fewer marriages and increased divorce rate) that were most felt on younger male cohorts.[161] Pampel and Williamson measured these results on age categories of 15- to 24-year-olds and found virtually identical results with expanded categories of 15- to 34-year-olds.[162] They argue that entrance into adulthood was less regulated and more complex for males specifically, with a

[156] Fred C. Pampel and John B. Williamson, "Age Patterns of Suicide and Homicide Mortality Rates in High-Income Nations," *Social Forces* 80, no. 1 (September 1, 2001), 254.
[157] Ibid., 255.
[158] Ibid., 267-268.
[159] Ibid., 270.
[160] Ibid., 275.
[161] Ibid., 255.
[162] Ibid., 275.

reduction in social capital that made the transition to autonomous adult roles fraught. In large part, echoing the works of Dagenais and Grell as it pertains to the crisis of masculinity and more generally, the difficulties faced by youth entering adulthood.

As it relates to precarity in employment as of the 1950s, Lise Thibodeau and James Lachaud provide additional proof in "Impact of economic fluctuations on suicide mortality in Canada (1926–2008)". They found that suicide rates increased during periods of economic contraction and expansion for males in Canada.[163] Thus, arguing that Durkheim's theory of integration and regulation proves true for capitalism, both periods of fluctuation cause instability.

Three periods were measured: (1) economic contraction of 1926 to 1950, (2) expansion of 1951 to 1973, and (3) moderate unemployment of 1974 to 2008. Males had higher suicide rates for each period and when stratified by age, males and females aged 45-64 were the most impacted. Though, males also had a significant coefficient value for the 15-24 age group in the second period.[164] The second period marked the entrance of Baby-Boomers into the labour force and the subsequent period materialised their mid-adulthood ambitions within a struggling economy. These findings connect with the works of Pampel and Williamson, that larger Baby-Boomer cohorts have an association with greater competition for employment opportunities and social capital. That said, it would be ideal if the correlation was measured over the cohort's lifetime, to understand how it varies throughout various periods of economic changes.

The following generation, Generation X, were also faced with a multitude of social forces. The Baby-Boomer generation came of adult age during the latter decades of the twentieth century as a large cohort when Generation X were entering early adulthood. Large cohorts tend to benefit

[163] Lise Thibodeau and James Lachaud, "Impact of Economic Fluctuations on Suicide Mortality in Canada (1926–2008): Testing the Durkheim, Ginsberg, and Henry and Short Theories," *Death Studies* 40, no. 5 (May 27, 2016), 311.
[164] Ibid., 309.

from increased social capital, and political and economic privileges by virtue of being a larger voting bloc.[165] The decrease in youth advantage measured by Pampel and Williamson covered not only Baby-Boomers but also Generation X, beginning in 1965. As will be shown in the Results and Discussion, this generation had some of the highest youth suicide rates and the strongest cohort effects across provinces. The very fact of coming-of-age during relatively high unemployment, lower social capital, shifting social structures, and changes to gender relations, may have impacted how they perceived their future.

2.4.1 Provincial Differences

Some suicide peculiarities of provincial suicide rates have already been mentioned above. Notably, the emergence of youth suicide has been measured and reported in Québec, Ontario, and Alberta beginning between 1950 and 1970. This section will provide some context and cover some idiosyncrasies pertinent to each province. It will also convene among the guiding theme that youth suicide began emerging as of the 1960s across many of the Canadian provinces with possible cohort effects. This section is also evidence that little research exists on studying long periods of time, beyond what was covered on Canada and Québec above. Most of the focus is placed on short periods of time with a more micro-perspective on certain risk factors and related themes.

Québec experienced many drastic changes in the mid-twentieth century after the Duplessis era of *retour à la terre* ended in the 1950s.[166] The transition from a strong religious presence in social, political, education, and cultural institutions towards rapid modernisation and secularisation had its impact on the population, marking the 1960s as the *révolution tranquille*.[167] As Thibodeau states, the modernisation period was more severe in Québec than other provinces, with male

[165] Pampel and John B. Williamson, "Age Patterns of Suicide and Homicide Mortality Rates in High-Income Nations," 254.
[166] Thibodeau, "Suicide Mortality," 15.
[167] Ibid.

suicide rates hitting their peak during this period.[168] Thibodeau turns to Durkheim to argue that the reasons surrounding this increase can be linked to anomie.[169] In essence, male suicide increased rapidly due to a historic shift in labour practices, from rural to urban but also the introduction of women in the workforce.[170] Further, a decrease in religious influence led to a shift in family compositions with a growing social acceptance of divorce, with changes to gender relations and identity.[171]

Beyond what was already covered, above, suicide rates for males in Québec remained relatively stable in the 1980s, climbed in 1990 to reach 35.8 per 100,000, and started to gradually retreat as of 2000 to 17.9 per 100,000 in 2017.[172] The rate for 2017 is the lowest recorded rate for the period 1981 to 2017.[173] Between 1999 and 2017, rates among male youth aged 15 to 19 decreased from a high of 35.1 per 100,000 to 9.8 per 100,000.[174] The same decrease is seen for men aged 20 to 34, from 47.5 to 17.4 per 100,000.[175] Men aged 35 to 49 also experienced an increase in the 90s that peaked in 1999 at 52.7 per 100,000 and has subsequently significantly decreased.[176]

The authors of the *Le Suicide au Québec: 1981 à 2017* did not reserve much space for the analysis of suicide trends for females. Suicide rates for females decreased since 1980, to then increase between 1991 and 1999. Since then, the rate has diminished to 6.1 per 100,000 in 2017,

[168] Ibid.
[169] Ibid.
[170] Ibid.
[171] Ibid., 16.
[172] Pascale Lévesque, Éric Pelletier, and Paul-André Perron, *Le Suicide au Québec: 1981 à 2017 -- Mise à Jour 2020* (Québec, Canada: Bureau d'information et d'études en santé des populations, Institut national de santé publique du Québec, 2020), 3.
[173] Ibid.
[174] Ibid.
[175] Ibid.
[176] Ibid., 3-4.

the lowest rate ever recorded for females in Québec.[177] Youth females aged 15 to 19 also experienced an increase in rates as of the 90s that only began to decrease in earnest in the mid-2000s.[178] The same is seen for the 35 to 49 category who have not seen much variation throughout this period. Males and females aged 50 to 64 have seen a less significant decrease compared to other age groups and an almost stabilisation of high rates.[179]

Regional differences mark the Québec territory. Rural areas such as Abitibi-Témiscamingue and Chaudière-Appalaches had significantly higher suicide rates than metropolitan centers such as Laval and Montréal for the period 2015-2017, even though metropolises have higher counts of *crude* suicides and ethnic/immigrant composition.[180] This pattern is mirrored for both males and females, with some minor differences. Beyond the obvious differences in sex, regional differences within provinces are not measured in this thesis which would be an interesting study of its own but does indicate possible reasons for increases in suicide rates during the modernisation periods seen in the mid-twentieth century.

The context of rurality also plays a part in the increasing suicide rate and suicide attempts in Ontario. Rebecca Barry et al. find that rural males are 70% more likely to die of suicide than their urban counterpart; the same is not true for females.[181] Access to psychiatric healthcare is a possible reason for this divide, with stigma, more lethal means of suicide, and drug and alcohol use as other factors.[182] As for the difference between the sexes, the authors argue that cultural and social norms of traditional masculinity, working in farming and forestry, and less access to all forms of care are

[177] Ibid.
[178] Ibid., 6.
[179] Ibid., 7.
[180] Ibid., 15.
[181] Rebecca Barry et al., "Rurality as a Risk Factor for Attempted Suicide and Death by Suicide in Ontario, Canada," *The Canadian Journal of Psychiatry* 67, no. 9 (September 2022), 686.
[182] Ibid.

factors.[183] The authors do not expand on these factors, as they do not highlight the precarity of working in heavy industry and resource extractive sectors, and more generally in regions far from economic centers. As pointed out by Dagenais and Grell, these areas are often disjointed and deeply affected by socio-economic shifts that directly impact the lived experiences of mostly male workers.

Newfoundland and Labrador (NL), in 2016, had most of its residents (41.9%) living in rural communities or rural population centers (23.7%).[184] Historically, NL had the lowest suicide rate among the provinces, but the rates have changed. Nathaniel J. Pollock et al. found that suicides rate have climbed from 4.6 to 15.4 between 1981 and 2018 in NL, which does not mirror the decline experienced at the national level for the same period.[185] Further, the largest increase in suicide rates was among youth (male and female, combined) aged 10 to 24, with an average annual percent increase of 3.5%.[186] As was mentioned above, the average annual suicide rate increase was higher among females (6.3%), with men still committing suicide more than women (4.9 to 1, male to female, 1981 to 2018).[187]

To return to the question of the rural risk factor and masculinity, the authors state that the federal moratorium in 1992 on the Atlantic cod fishery resulted in an estimated 40,000 people losing their job - the largest industrial layoff in Canadian history.[188] The moratorium did not result in an initial spike in suicide but rather may have had compounding effects for the years that followed. Major demographic changes in rural areas followed the moratorium over the following decades; there was a 12% population decline between 1992 and 2007 in rural areas, financial

[183] Ibid.
[184] Nathaniel J. Pollock et al., "Suicide in Newfoundland and Labrador, Canada: A Time Trend Analysis from 1981 to 2018," *BMC Public Health* 21, no. 1 (July 2, 2021), 2.
[185] Ibid., 4.
[186] Ibid.
[187] Ibid.
[188] Ibid., 7.

hardship, and a loss of cultural identity and social connectedness.[189] Deindustrialisation or changes in industrial practices will be covered in greater detail in the Discussion section.

There was a five-fold difference between male and female suicide deaths for youth aged 12 to 24 years in Nova Scotia between 1995 and 2004, and significantly more for males when in rural areas.[190] Though, the youth suicide rate was the lowest among Canadian provinces during this period.[191] Variations exist within the province, with substantial geographic heterogeneity mostly influenced by the socio-economic levels of each sector. Generally, rural areas had higher rates of suicide and 'avoidable deaths', with 'avoidable deaths' being 50% and 80% higher for males and females in the lowest ranking socio-economic status, respectively.[192] Lastly, suicide and 'avoidable deaths' rates in general peak around the age of 19 but do not substantially decrease afterwards, indicating a need to study further the longitudinal changes for these ages.

The "Suicide and Attempted Suicide in Nova Scotia 1995–2004" report covering the same period has far less depth. The suicide rate declined over this 10-year period, but the difference was not statistically significant.[193] Also, the decline is visible for male age-adjusted rates over the period, the same cannot be said for female rates that waver only slightly. Suicide deaths were associated with income, with those in the lowest quartile having higher rates.[194] Interestingly, rural and urban suicides were almost exactly equal to the urban/rural frequency of Nova Scotians.[195]

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[189] Ibid.
[190] T. J. B. Dummer et al., "Death in 12–24-Year-Old Youth in Nova Scotia: High Risk of Preventable Deaths for Males, Socially Deprived and Rural Populations—A Report from the NSYOUTHS Program," *International Journal of Pediatrics* 2010, no. 1 (2010), 5-6.
[191] Ibid.
[192] Ibid., 5.
[193] Peter Nestman and Population Health Research Unit, "Suicide and Attempted Suicide in Nova Scotia (1995–2004): A Report" (Halifax, Nova Scotia: Department of Health Promotion and Protection, 2008), 31.
[194] Ibid., 37.
[195] Ibid., 36.

What would have been fascinating to see is a distribution of urban/rural suicides and income bracket by age, and/or sex as seen with Dummer et al.

Prince Edward Island (PEI) follows similar patterns as seen across the Canadian provinces. The male-to-female sex ratio was 4 to 1 between 2002 and 2011.[196] The suicide rates in PEI match the national average for the same period and slightly increase between the first half of the decade studied to the latter half.[197] Males were more likely to commit suicide in the 15 to 39 age group than females but the reverse is seen for the 40 to 59 category.[198] Lastly, possible cohort effects may be at play, with the average age of suicide increasing from 41 in 2002 to 50 in 2011.[199] Studies covering twentieth century suicide in PEI were not found.

Suicide in New Brunswick has steadily increased between 1955 and 1983.[200] This trend is consistent with the other provinces and the Canadian average. Though, rates have increased beyond the national average as of the mid-1990s and stabilised into the mid-2000s.[201] Grell's monograph and other work indicates the extent of youth suicide in New Brunswick. Grell also presented the regional differences in suicide in politically and economically underserved areas.

"The Alberta GPI Accounts: Suicide" for the years 1961 to 1999 measured a general change for suicide rates from a low of 7.8 per 100,000 in 1953 to a high of 18.0 per 100,000 in 1992, with a slight decrease of 14.4 per 100,000 in 1992.[202] Alberta's suicide rate was 27% higher than the national average between 1960 and 1992.[203] The male-to-female ratio for suicide was 3.7 times higher for males, and there were 4 times more suicides for males aged 10 to 49 in Calgary, in

[196] Amanullah et al., *Suicide and Mental Health in Prince Edward Island: 2002-2011*, 9.
[197] Ibid.
[198] Ibid., 11.
[199] Ibid.
[200] New Brunswick Department of Health, *Connecting to Life: Suicide Prevention Program Description*, 1 online resource (21 pages) vols. (Fredericton, N.B.: New Brunswick Department of Health, 2007), 6.
[201] Ibid.
[202] Mark Anielski, "The Alberta GPI Accounts: Suicide" (Alberta: The Pembina Institute, November 2001), 1.
[203] Ibid., 5.

1998.[204] The number of males committing suicide in Calgary in 1998 was 10 times higher than in the 1950s. The report failed to differentiate the suicide rates by age group. J. R. Cutcliffle et al. indicate that 2/3 of males who committed suicide between 1993 and 1997 were unmarried (divorced, widowed, single, or separated).[205] Also, that rates for younger cohorts have been increasing at a faster pace since the 1950s, indicating the beginning of youth suicide in Alberta.

A 2007 to 2012 study by Rosina Mete indicated a connection between Alberta oil-sand and natural gas boom and bust cycles and Ontario's automobile industry. Mete argued that the 2008 recession led to an increase in suicide across the board as of 2010, with rates higher in Alberta.[206] The data are not sex-disaggregated which leaves much of the differences between male and female suicide unexplored. Mete finds that rates for rural and remote regions are increasing over the period.[207]

Manitoba had similar but slightly higher results than other provinces, with a sex-ratio of 5.2 for youth aged 24 and under between 1984 and 1988.[208] Eric Sigurdson et al.'s results indicate that suicide occurred more frequently for youth aged 20 to 24.[209] For the period 1992 to 1999, males over the age of 85 (34 per 100,000) had the highest suicide rate with males aged 20 to 24 having the next highest rate (25 per 100,000).[210] Indigenous suicide is a pressing issue in Manitoba,

[204] Ibid., 8.
[205] J. R. Cutcliffe, A. Joyce, and M. Cummins, "Building a Case for Understanding the Lived Experiences of Males Who Attempt Suicide in Alberta, Canada," *Journal of Psychiatric and Mental Health Nursing* 11, no. 3 (2004): 306.
[206] Mete, "Examination of the Geographic Parameters of Suicide," 8.
[207] Ibid.
[208] Eric Sigurdson et al., "A Five Year Review of Youth Suicide in Manitoba," *The Canadian Journal of Psychiatry* 39, no. 8 (October 1, 1994), 399.
[209] Ibid.
[210] Manitoba Health and Healthy Living, *A Framework for Suicide Prevention Planning in Manitoba*, 1 online resource (26 pages) vols. ([Winnipeg, Man.]: [Manitoba Health and Healthy Living], 2006), 3.

accounting for 25% of suicides between 1994 and 2001.[211] The ratio of Indigenous suicide climbs to 56% for youth suicide during the same period.[212]

It would be impossible to discuss suicide in Manitoba without referring to Indigenous suicide. Manitoba and Saskatchewan have the highest percentage of Indigenous peoples as of the 2021 census among the 10 provinces at 18.1% and 17%, respectively.[213] Just under 10% of the population of Manitobans aged 24 and under were Indigenous between 1984 and 1988.[214] Their suicide rate was 10 times that of non-Indigenous youth and comprised 47.5% of total suicides for this period.[215] The reality of Indigenous suicide is different from non-Indigenous suicide and as seen here, makes up almost half of the suicides reported in Manitoba between 1984 and 1988, and 1994 and 2001. As the authors show, the method, precipitating factors, socio-economic factors, and urban/rural location are different.[216] Not to mention, the historical and colonial trauma, and systemic discrimination that is lived by many Indigenous peoples and how this intersects with their lived realities.

The sex-ratio also seems to be shifting for Manitoba youth. In a 2015 report, The Manitoba Office of the Children's Advocate studied 50 of the 72 suicides for youth under 18 and found that female youth have begun outnumbering their male counterparts. Between 2009 and 2013, 36 of the 50 (1.5:1 female-to-male sex-ratio) suicides were female youth.[217] Granted, the report does not cover all 72 suicides which does limit the full applicability of the study. Similar shifts in the sex-

[211] Ibid.
[212] Ibid.
[213] Statistics Canada. 2023. (table). *Census Profile*. 2021 Census of Population. Statistics Canada Catalogue no. 98-316-X2021001. Ottawa. Released November 15, 2023. https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E.
[214] Sigurdson et al., "A Five Year Review of Youth Suicide in Manitoba," 400.
[215] Ibid., 399-400.
[216] Ibid., 400.
[217] Manitoba Office of the Children's Advocate, *Manitoba's Changing Face of Suicide and the Narrow Window for Intervention: Phase One Report : A Special Report*, 1 online resource (18 pages) : colour illustrations vols. (Winnipeg, Manitoba: Manitoba Office of the Children's Advocate, 2015), 9.

ratio are also seen in Ontario youth. Gursharan S. Soor et al. indicate that the ratio was 2 to 1 (male-to-female) for 11- to 18-year-olds between 2000 and 2006.[218] In conjunction with Kirmayer, and Skinner and McFaull's work for all of Canada, we are beginning to see major shifts and reversals in the sex-ratio for certain regions in Canada, for youth.

Saskatchewan's suicide distribution mirrors that of Manitoba between Indigenous and non-Indigenous peoples. Generally, rates for Indigenous youth aged 15-24 are five to six times higher than the Canadian average.[219] Rates for Indigenous peoples in Saskatchewan were 4.3 times higher than non-Indigenous peoples, in 2016.[220] These rates were higher for youth and even higher for female youth.[221] Indigenous suicide in Manitoba and Saskatchewan will be covered in more depth in the Discussion section.

British Columbia follows similar trends to the other provinces. Suicide is one of the top three causes of mortality for men aged 15 to 44 in BC.[222] Others found that suicide is the second most cause of death for males and females aged 15 to 24 in BC, in 2006.[223] Further, suicides rates for men eclipse those of women for all age groups between 2001 and 2005, peaking in the middle age at 45-49.[224] This is notable as it lines up with the emergence of youth suicide as of the 1960s and has a similar pattern to those measured in PEI for a similar period. Individuals aged 45-49 in 2001-2005 are part of the 1960 cohort who begin committing suicide in larger frequency in the 1970s at the age of 15 to 19. Female suicide in BC has been discussed above.

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[218] Gursharan S. Soor et al., "The Effects of Gender on Adolescent Suicide in Ontario, Canada," *Journal of the Canadian Academy of Child and Adolescent Psychiatry* 21, no. 3 (August 2012), 179.
[219] Saskatchewan Health Quality Council, *Self-Harm and Suicide in First Nations Communities in Saskatchewan: Full Report*, 1 online resource vols. (Saskatoon, Saskatchewan: Health Quality Council, 2022), 6.
[220] Ibid., 9.
[221] Ibid.
[222] Dan Bilsker and Jennifer White, "The Silent Epidemic of Male Suicide," *BC Medical Journal* 53, no. 10 (December 2011), 529.
[223] Annie Smith et al., *A Seat at the Table - A Review of Youth Engagement in Vancouver*, 1 online resource vols. (Vancouver, B.C.: McCreary Centre Society, 2009, 57.
[224] Bilsker and White, "The Silent Epidemic of Male Suicide," 530.

The idiosyncrasies mentioned above for youth suicide in each province are in no way exhaustive. The period of 1950 to 2019 was not fully covered for each province, either because I was unable to find suitable research, or it may not exist. That said, youth suicide emerged and is still present in most if not all the provinces studied. Youth suicide has also changed dimensions, with females closing the gap and even having higher rates than males in some provinces. It is important to understand and map youth suicide prior to its emergence as to understand its root causes within a context of shifting social forces and institutions. A long mapping of sex-disaggregated suicide rates is necessary to situate youth suicide as something relatively recent and as requiring a sociological analysis.

Chapter 3: Theoretical Framework

Fundamentally, Durkheimian theory reigns supreme in sociological understandings of suicide.[225] Violette's dissertation reserves a whole chapter to Durkheim's work on suicide and to some extent, every APC scholar mentioned above discusses Durkheim's theory and typology on suicide. Durkheim's theory is quasi-inescapable, but little is said on the restraints that a typology may have on the study of suicide and the assumptions it carries. Although a useful tool in synthesising ideas, typologies often narrow the scope of study and tend to oversimplify phenomena it hopes to understand. Reasons for suicide are numerous and multi-faceted; although dated, The Report of the Task Force on Suicide in Canada published in 1995 indicates seven major factors for suicide, each with their own sub-categories that range vast social and psychological determinants. One of the key insights from Durkheim's work is that social forces play a significant role in influencing suicide rates.

Durkheim stressed the importance of quantitative methods to understanding the social causes of suicide. With the use of statistical methods, sociology seeks to understand suicide as a social phenomenon and ask why it takes a particular shape.[226] More specifically, how social forces shape suicide. The premise of a quantitative method is to aggregate the lived experiences in society and transpose them on a historical background to establish an object of study.[227] Durkheim was able to establish suicide patterns with the help of suicide rates explained by social factors of religious affiliation, marital status, employment, and income.[228] As such, Durkheim extrapolated a theory

[225] Jienian Zhang et al., "Phenomenology, Cultural Meaning, and the Curious Case of Suicide: Localizing the Structure-Culture Dialectic," *Philosophy of the Social Sciences* 54, no. 6 (December 2024), 517; Anna S. Mueller et al., "The Social Roots of Suicide: Theorizing How the External Social World Matters to Suicide and Suicide Prevention," *Frontiers in Psychology* 12 (March 31, 2021), 2.
[226] Violette, "Contemporary Suicide in Canada," 20-21.
[227] Ibid., 21.
[228] Ibid.

that suicide was an objective social fact, implying that regulative and integrative social forces were determinants of suicidal behaviour.[229] As it pertains to this thesis, Durkheim's suicide theory is crucial as a premise – a starting point. It informs the foundational argument that suicide can and must be explained, at least in part, by social factors through quantitative methods. Further, that the meaning derived from suicide requires a sociological lens.

Integration and regulation act simultaneously in post-industrial societies such as Canada. Thus, their effects will be referred to as integration/regulation to emphasise the dual social force. The complementary forces of integration/regulation are a symptom of rising individualism under Capitalism. The change in nomenclature is important to conceptualise and modernise Durkheim's typology to contemporary circumstances. It also follows the works of Krull and Trovato on QC who argue similarly.[230]

I hope to present a theoretical framework that refreshes but also breaks, to a certain degree, from the hegemony of Durkheimian theory and typology with a more contemporary take. Mark Fisher's *Capitalist Realism* will provide a sociological perspective that counters the individualistic paradigm in suicidology and seeks to *understand* suicide within a larger sociological context. Fisher argues that neoliberal late-capitalism has individualised mental health issues amidst its endemic spread and has foreclosed any possibility for its politicisation and social interpretations.[231] Mental health has become an individual problem, relegated to the mind as seen with Jaworski, and Fisher writes that,

[229] Ibid., 21-22.
[230] Krull and Trovato, "The Quiet Revolution and the Sex Differential in Quebec's Suicide Rates," 1125-1126.
[231] Fisher, *Capitalist Realism*," 21.

> By privatizing these problems - treating them as if they were caused only by chemical imbalances in the individual's neurology and/or by their family background - any question of social systemic causation is ruled out.[232]

Essentially, we are looking at Durkheimian 'Egoism' within a framework of integration with highly liberal, capitalist tendencies, in urban cities/regions, eschewing collective identities.[233] Durkheim theorised that industrial society tended to fragment and separate individuals according to functions devised through a division of labour, and thus limiting integration. [234] In conjunction, and this is where the connection between Fisher and Durkheim takes shape, Fisher questions the self-evident individualisation of mental health as he aptly puts it, the "privatization of stress" that denies the place of politics (i.e. critiquing Capitalism) in mental health disorders.[235] Simply, we see a convergence of Fisher's individualisation of stress and Durkheim's Egoism and weakening integration through Capitalistic individualism. Fisher further poses a question that is central to my theoretical framework:

> Instead of treating it as incumbent on individuals to resolve their own psychological distress, instead, that is, of accepting the vast *privatization of stress* that has taken place over the last thirty years, we need to ask: how has it become acceptable that so many people, and especially so many young people, are ill?[236]

My goal is to, in part, provide the necessary scope to begin to answer Fisher's question and to challenge the dominant ontology of suicidology that individuals are wholly responsible for their mental health. What Fisher does exceptionally well here is that he does not make a causative

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[232] Ibid.
[233] Zhang et al., "Phenomenology, Cultural Meaning, and the Curious Case of Suicide: Localizing the Structure-Culture Dialectic," 520.
[234] Ronald Niezen, "The Durkheim-Tarde Debate and the Social Study of Aboriginal Youth Suicide," *Transcultural Psychiatry* 52, no. 1 (February 2015), 100.
[235] Fisher, Capitalistic Realism, 19.
[236] Ibid.

association between mental health and suicide. Rather, his question transcends this alleged connection and touches upon the political and the social by moving beyond the pre-eminence afforded to the mind and the individual.

Furthermore, egoism and Capitalistic tendencies towards individualisation find a confluence with anomie and youth suicide. Youth suicide as egoistic and lacking integration due to individualisation and fragmentation acts in accordance with the anomie theorised by Dagenais. Rapid changes in employment, institutional crises and discontinuities, and political turmoil are symptoms of Capitalism. The rapid changes experienced by social structures such as the family, marriage, and employment deeply impacted the lived experiences of youth through the individualising forces of Capitalism.

The problem imperatively requires a sociological perspective that highlights historical events that mark a generation and provides empirical evidence that can then allow for more localised investigation. Thus, we are still within the Durkheimian scope by providing quantitative evidence to explain social events. The difference though is that we are moving beyond the typology to an explanation that transcends the aggregate and into the personal by touching upon political and social questions at the onset of individualising forces. To answer why youth are 'ill' is to trace connections between Capitalism (Egoistic) and the ability to imagine a future (Anomie) within (or even, without?) the system and beyond the individual ("privatization of stress").

As Daniel Dagenais wrote in the introduction to the *Recherches sociographiques* (2007), "*L'objectif premier de la statistique descriptive est l'identification de la physionomie du suicide contemporain."*[237] Further, the quantitative approach provides the ability to draw larger and more far-reaching conclusions that effectively "*s'intéresse à la personnalité historique d'un phénomène,*

[237] Daniel Dagenais, "Présentation: Le suicide au Québec comme révélateur de la signification du suicide contemporain," *Recherches sociographiques* 48, no. 3 (2007). 12.

à sa singularité."[238] Essentially, if I may borrow from Fisher, it is the privatisation of suicide that has effectively removed it from political and social interpretation. And it is this meaning that we must uncover to begin to better understand why youth have committed suicide and why they continue to do so at alarming rates. As the results will show, youth suicide emerged simultaneously in every province – it is not a localised matter.

3.1 Research Questions

a. **How can we explain the changes to the traditional Durkheimian curve caused by the emergence of youth suicide in the 1960s and 1970s?**

    b. **Are there differences between males and females?**

c. **Are there cohort effects on suicide rates for youth aged 15-19 in the 1960s and 1970s, on a per-province basis, in Canada?**

    d. **Are the shifts in the suicide pattern better attributed to age and period effects?**

e. **Are there any differences between male and female suicide patterns?**

[238] Ibid.

Chapter 4: Methodology and Data

4.1 Data Collection

Data were retrieved from official Statistics Canada micro-data and publications. The data were accessed through the Quebec Inter-University Centre for Social Statistics (QICSS) after a proposal to access the data was accepted and I gained access in March 2024. I had access to the Canadian Vital Statistics Death Database (CVSD) which had micro-data available for successful suicides from 1974 to 2022. The data were split between the sexes to provide sex-disaggregated results.

This thesis received a certificate of 'Ethical Acceptability for Research Involving Human Subjects' from the members of the University Human Research Ethics Committee, certificate number: 30020872. The certificate can be found in Appendix B.

The Official Report of the National Taskforce on Suicide in Canada (Official Report) was used for data between 1950 and 1973. The count data from the Official Report was digitised with the help of the "Data from Picture" feature in Excel, as the data were only available in print format. The data were cross verified to confirm that it was properly copied. To maintain congruent 5-year categories, the last year of study was 2019 (period of 2015-2019).

The Canadian population data that were used for this study was collected from official Statistics Canada (StatsCan) sources. The population data for 1950 to 1970 were taken from yearly population estimates (here), and from a similar but different StatsCan source for 1971 to 2019 (here). The sources are also found in the Bibliography. The yearly population estimates for 1950 to 1970 were counts measured at the thousandth interval (ex. yearly population estimate: 1,090.2 x 1,000 = 1,090,200) and not exact numbers. The 1971 to 2019 population data were whole numbers. The population data were age, sex, and province specific.

The CVSD datasets contain the age at time of death, sex, geographical location, and the 4-digit death code set forth by the World Health Organisation's (WHO) International Classification of Diseases (ICD). More detail on the ICD classification follows in its own subsection. That said, only confirmed successful suicides were counted in this study, accounting for the differences in the codes through the multiple iterations of the ICD that span this study.

The CVSD did not always follow year-for-year the release of the ICD codes. The following ICD codes were used when gathering data on self-inflicted deaths from the CVSD:

ICD Revision	ICD Release	Years Active in CVSD	ICD Codes for suicide
ICD-10	1992	2000-	X60-X84 & Y87.0
ICD-9	1979	1979-1999	E950-E959
ICD-8	1965	1969-1978	E970-E979

Table 1: ICD Codes for Suicide in the CVSD

RStudio was used for all data-manipulation and for the data analysis. The datasets were filtered for the four variables, manipulated, and sorted into an Excel sheet separated by sex, province, and by age group (15-19, 20-24, etc.). People aged 85 and over, and 14 and under were excluded from the data gathering phase and from the analysis for one or more of the following reasons: the last age group in the Official Report is 80- to 84-year-olds, with everyone 85 and over grouped together; they were very few in number; or, outside the scope of this thesis. Further, it follows common practice, as seen with Légaré and Hamel, amongst others.

The data analysis R scripts are accessible in a GitHub repository found on my GitHub account, and a link will also be provided in the bibliography section. The descriptive statistics data will also be available on my GitHub account.

To conform to QICSS output guidelines, count data with a cell count of less than 5 cannot be withdrawn from the QICSS laboratory, and all values must be rounded for descriptive statistics. Descriptive statistics must be rounded to the nearest multiple of 5 (ex. 12 is rounded to 10; 14 is

rounded to 15), prior to creating suicide rates per 100,000. Thus, due to multiple cells with values less than 5, Manitoba and Saskatchewan were grouped for females to present any descriptive statistics whatsoever. For other provinces, older age groups for males and females were combined into 65 to 84, 70 to 84, or 75 to 84 depending on the circumstances of the data available.

The provinces of Newfoundland and Labrador, New Brunswick, Nova Scotia, and Prince Edward Island were grouped as Atlantic Canada. The grouping of the count data for Atlantic Canada is an unfortunate necessity to be able to run any analysis whatsoever. There are unfortunately (and, fortunately) a lot of cell counts with 0 suicides spanning multiple age and period categories for each province, even after age and period are grouped into 5-year categories. Meaning, that it would be impossible to fit the data into an APC model without grouping the Atlantic Canada provinces together. Of course, this leads to the limitation that the results will not be province specific and touch upon their respective idiosyncrasies.

For anonymity, all rates presented in the descriptive tables and graphs will be expressed as a rate of suicide per 100,000 population, and the count data released from QICSS have been rounded. The rates were calculated by dividing the averaged five-year crude count of suicides by the averaged age- and sex-specific population data, multiplied by 100,000. Sex-ratios were calculated by dividing the rates of males with the rates of females. The sex-ratios for Manitoba and Saskatchewan are presented separately but were the product of dividing male rates for Manitoba and Saskatchewan with the grouped rates of females in Manitoba and Saskatchewan. This will of course impact the accuracy of the sex-ratios for Manitoba and Saskatchewan but was done to provide sex-ratios for both provinces to highlight some differences between the provinces. Further, sex-ratios were provided for the age groups 15-19 up to 65-84 to standardise the output across provinces, because some provinces have their data grouped for age categories 65-69 and above.

4.2 The 'Cohort'

Age, period, and cohort effects have already been defined but more depth is needed to properly identify what exactly is a cohort. The cohort as a concept is the attachment individuals have to a social group of others of the same age, born within the same period. Ryder labels this the 'birth cohort', that individuals in any given cohort make fresh contact with contemporary social heritage and will subsequently carry this imprimatur throughout their life trajectory.[239] This lens acts as a filter for social and cultural effects. Ryder puts it best when he describes each cohort as experiencing their own "slice of life" in a temporally specific stream of social confluence acting upon and being acted upon by social institutions that tend to minimise variability.[240]

Thus, the comparison of cohort careers is possible as each cohort permits and absorbs change to different degrees. For example, a sudden shift in cohort adherents due to emigration or immigration may impact cohorts differently in terms of housing accommodations, size of families, or school class sizes – essentially, leading to inter-cohort differences. Further, this statement gains complexity when one begins to ask about causality, about political and climate reasons, at the micro and macro level. We are measuring estimates of cohort effects that seem relatively benign as a number but gain complexity and a myriad of causality once contextualised.

With that said, it is important to qualify that cohort effects are not independent of age and period effects. Not only in terms of quantifying their impact but also conceptually. The age, period, and cohort interaction model (APC-I) conceives of cohort effects as the moderation between age and period interactions.[241] If age or period effects are static across their respective period or ages, then we can argue that cohort effects do not exist.[242] However, if the age and period effects vary

[239] Ryder, "The Cohort as a Concept," 844.
[240] Ibid.
[241] Luo and Hodges, "The Age-Period-Cohort-Interaction Model," 1171.
[242] Ibid.

between cohorts then explanations must be sought in terms of possible cohort effects as a statistical interaction may exist.[243] More on this method will be presented below.

4.3 Interdependence or Collinearity of APC

As briefly covered above, APC models struggle with the inherent interdependence or collinearity of the variables. The conundrum is also commonly referred to as the 'identification problem' and it is presented as such: C = P - A. The variables are dependent on each other wherein one can determine the individuals birth cohort by subtracting their age by the period (year in which someone committed suicide). In other words, it is difficult to ascertain the effect of each variable independently from the other in a linear model – knowing two of them implies the third. Thus, explaining the two quotes in the introduction that want to restrict the – for good reason – boundaries of APC inferences. It is also because of the identification problem that so many models exist and that there is no consensus among scholars for which model best applies. In the case of Thibodeau, and Légaré and Hamel, each use a different model, and the former finds a statistically significant cohort effect whereas the latter does not. Therefore, putting into question if a cohort effect exists and more generally, the robustness of APC modeling.

There is also a further issue regarding the cohort variable. Wasserman posits that it is difficult to differentiate cohort effects from generational effects. It is the age-old question of which came first, the chicken or the egg – he writes,

> For example, the APC model specifies birth cohorts, but it is likely that the social behavior of generations (Mannheim, 1952), and not birth cohorts, will be influenced

[243] Ibid.

by environmental events (e.g., the future suicide behavior of specific generations who experience war combat [Elder and Clipp 1986; Hearst et al. 1986]).[244]

It seems that the question is unnecessary. Social events impact generations differently because they were born at different times, in different periods of their life. When they are born (ie. what birth cohort they belong to) is of utmost importance to determine their life stage and therefore, their social heritage.

4.4 APC Model

4.4.1 Contenders

Many statistical models exist to estimate age, period, and cohort effects, and there is no consensus among academics as to which model provides the most accurate estimates. I will present the models used by Légaré and Hamel, and by Thibodeau, as they are the most 'recent' APC models used for suicide studies on a Canadian population. Further, the 'bounding' model created by Ethan Fosse and Christopher Winship will be briefly mentioned as it was a contender. Then, I will present the APC-I model that I used for my analysis.

Légaré and Hamel used the model theorised by Katherine M. Keyes and Guohua Li in "A Multiphase Method for Estimating Cohort Effects in Age-Period Contingency Table Data". Keyes and Li posit a three-phased method that begins with a graphical inspection, followed by a median polish to remove the log-additive components of age and period effects, and lastly, a linear regression of the residuals from the median polish to quantify the magnitude of the cohort effect.[245] Their method attempts to forego the identification problem by focusing only on the nonlinear cohort effects. That is, the nonlinear effects will indicate unique social phenomena that affected a

[244] Ira M. Wasserman, "Age, Period and Cohort Effects in Suicide Behavior in the United States and Canada in the 20th Century," *Journal of Aging Studies* 3, no. 4 (December 1989): 297.
[245] Katherine M. Keyes and Guohua Li, "A Multiphase Method for Estimating Cohort Effects in Age-Period Contingency Table Data," *Annals of Epidemiology* 20, no. 10 (October 2010): 779.

cohort more than any other and remained with the cohort as they aged, thus acting as more than a period effect, such as referring to major historical events that alter a cohort and/or a generation. That said, the assumption that this method truly isolates nonlinear cohort effects is questionable at best and is premised on the assumption that nonlinear cohort effects act independently from nonlinear age and period effects, and from differential effects for people of different age groups.[246] Further, their model takes for granted that cohort effects remain constant throughout their lifetime, which cannot be calculated with the median polish model but can be estimated with the APC-I. Lastly, age and period effects are measured through a graphical inspection and are not statistically derived.

Thibodeau uses the intrinsic estimator (IE) theorised by Yang Yang et al. in "The Intrinsic Estimator for Age-Period-Cohort Analysis: What It Is and How to Use It". Yang et al.'s model attempts to identify a function that uniquely determines the effects of each parameter (A, P, and C) assuming that the APC variables are interdependent. Thus, and as Thibodeau argues, "IE is a promising alternative modeling approach that yields a unique solution to Equation 1 using a vector-space projection approach."[247] Their use of 'promising' is of note as it exemplifies how APC analysis is still in its budding stage – even after Ryder's influential paper was first published in 1965. Further, Thibodeau writes that "This is an asset especially in historical demography studies, in which it is important to track the most parameters possible for each dimension. Another benefit is that IE coefficient estimates are more statistically efficient than CGLIM" (conventional generalized linear models – an older model for measuring APC).[248] Even if that were true, many

[246] Liying Luo and James S. Hodges, "The Age-Period-Cohort-Interaction Model for Describing and Investigating Inter-Cohort Deviations and Intra-Cohort Life-Course Dynamics," *Sociological Methods & Research* 51, no. 3 (August 1, 2022), 1166 & 1199.
[247] Thibodeau, "Suicide Mortality in Canada," 6.
[248] Ibid.

scholars advise against using the IE model as it is too dependent on a properly designed matrix which opens it up to biases and undue assumptions, and for Luo and Hodges, the IE model conceives of cohort effects as rigid and unshifting through its life cycle.[249]

Fosse and Winship propose a model that attempts to bound the analysis by "using explicit theoretical considerations that are based on the expected size, direction, or overall shape of one or more of the temporal effects." and thus, partially identifying APC effects.[250] The bounds can be, depending on the assumptions and study population, accurate enough to provide near point identification.[251]

For example, Fosse and Winship conducted an APC analysis of homicide rates in the United States and bounded the age effect by assuming that it would consistently increase during adolescence and decrease after young adulthood.[252] Further, they restricted the period effect by assuming that the homicide rate would not decrease during the second-half of the 1980s due to the crack epidemic.[253] These bounds help narrow the estimates of the size and slopes of the linear and nonlinear components of an APC model. Their results, like the APC-I model, can determine the lifecycles of cohorts and do not assume that cohorts remain constant throughout their lifecycle. That said, not only would bounding my analysis for each province prove to be too complex, but assumptions regarding the trajectory of suicide at a federal or even provincial level over a long period of time would be overly simplistic and impractical.

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[249] Ethan Fosse and Christopher Winship, "Analyzing Age-Period-Cohort Data: A Review and Critique," *Annual Review of Sociology* 45, no. 1 (July 30, 2019), 476; Luo and Hodges, "The Age-Period-Cohort-Interaction Model," 1173.
[250] Ethan Fosse and Christopher Winship, "Bounding Analyses of Age-Period-Cohort Effects," *Demography* 56, no. 5 (October 1, 2019), 1976.
[251] Ethan Fosse and Christopher Winship, "Analyzing Age-Period-Cohort Data: A Review and Critique," *Annual Review of Sociology* 45, no. 1 (July 30, 2019), 481.
[252] Ethan Fosse and Christopher Winship, "Bounding Analyses of Age-Period-Cohort Effects," *Demography* 56, no. 5 (October 1, 2019), 1997.
[253] Ibid., 1997-1998.

4.4.2 APC-I Model

Amid this statistical maelstrom, I turn to Luo and Hodges who posit the age, period, and cohort interaction model (APC-I). The APC-I model challenges and improves upon three key areas of what Luo and Hodges term the 'classical APC models' that attempt to isolate each variable, A, P, and C. (1) Firstly, the APC-I model does not suffer from the identification problem as it does not require constraining one variable over the other.[254] This is so, as the two-way ANOVA test for the age-by-period interaction is identified and thus, avoids the identification problem while also allowing for the inclusion of additional predictors.[255] (2) Secondly, the APC-I model recognises the dependence of A, P, and C, so it foregoes the ongoing dilemma of isolating each from the other.[256] Cohort effects are identified by examining the varying impacts of age and period interactions. In other words, if the effects of age or period differ, it suggests that individuals of different ages have experienced period effects differently, and vice versa.[257] (3) Lastly, rather than assuming that intra-cohort effects are the same over a cohort's life cycle, the life course dynamics of a cohort can be measured with the APC-I model.[258]

That said, Luo and Hodges state that the APC-I model is not meant to solve the identification problem but rather, better align the APC model with "the sociological conceptualization of what cohort effects are and when such effects can be observed.", as defined above.[259] It is exactly for this reason that Dagenais, Gagné and Dupont, Grell, and others place so much emphasis on groups of individuals that experienced birth, marriage, and entry into adulthood as extremely important.

[254] Jiahui Xu and Liying Luo, "The R Journal: APCI: An R and Stata Package for Visualizing and Analyzing Age-Period-Cohort Data," *The R Journal* 14, no. 2 (October 11, 2022), 79.
[255] Luo and Hodges, "The Age-Period-Cohort-Interaction Model," 1199.
[256] Xu and Luo, "The R Journal: APCI," 79.
[257] Ibid., 77.
[258] Ibid., 79.
[259] Luo and Hodges, "The Age-Period-Cohort-Interaction Model," 1200.

And it is for this reason that I believe the APC-I model is conceptually the best model for investigating cohort effects for Canadian youth suicide beginning the 1960s.

Much of the following will be paraphrased from Luo and Hodges "The Age-Period-Cohort-Interaction Model for Describing and Investigating Inter-cohort Deviations and Intra-cohort Life-course Dynamics", so I encourage all curious readers to turn to their article for a more detailed and contextualised understanding of the APC-I model. The APC-I model used by Luo and Hodges is not fit for aggregate data but must be presented, as the modified version designed for aggregate data is founded upon its basic principles. If I may borrow from the authors as I wish to extend the same generosity: the following section "is fairly technical, so one can skip it on a first reading."[260]

The APC-I model is based on the generalised equation:

Equation (1)[261]

$$g\left(E\left(Y_{ij}\right)\right) = \mu + \alpha_i + \beta_j + \alpha\beta_{ij(k)}$$

g, Y_{ij}, α_i, and β_j are all borrowed from the classical APC model, while $\alpha\beta_{ij(k)}$ is new to the model to capture the age-by-period interaction. Subscript i refers to age groups $i = 1, 2, \ldots, a$, periods $j = 1, 2, \ldots, p$, and cohorts $k = 1, 2, \ldots, (a + p - 1)$.[262] $E(Y_{ij})$ indicates the expected value from Y for the ith age group in the jth time period. Where the APC-I differs, is when the classical model sets the sum of coefficients to zero as so: $\sum_{i=1}^{a} \propto_i = \sum_{j=1}^{p} \beta_J = \sum_{k=1}^{a+p-1} y_k = 0$ (Y_k denotes the mean difference from μ that is associated with membership in the kth cohort), as is usual with ANOVA constraints for classical APC models.[263] Rather, the APC-I model follows that $\alpha\beta_{ij(k)}$ refers to the interaction of the ith age group and jth period group as it corresponds to the kth cohort effect –

[260] Luo and Hodges, "The Age-Period-Cohort-Interaction Model," 1177.
[261] Ibid., 1174.
[262] Ibid., 1168.
[263] Ibid.

crucially, the cohort effect Y_k is not independent from age and period effects.[264] Further, the effect of one cohort group comprises of multiple age-by-period interaction terms $\alpha\beta_{ij(k)}$, referring to the interactions that lie on the same diagonal of a table with age in rows and periods in columns.[265] See Table A for a visual representation of this interaction. For the rest, *g* acts as the "link function", α_i marks the mean difference from the global mean μ that is associated with the *i*th age category and β_j marks the mean difference from μ that is associated with the *j*th period.[266]

	Period		
Age	**1**	**2**	**3**
1	$\mu + \alpha_1 + \beta_1 + \alpha\beta_{11(3)}$	$\mu + \alpha_1 + \beta_2 + \alpha\beta_{12(4)}$	$\mu + \alpha_1 + \beta_3 + \alpha\beta_{13(5)}$
2	$\mu + \alpha_2 + \beta_1 + \alpha\beta_{21(2)}$	$\mu + \alpha_2 + \beta_2 + \alpha\beta_{22(3)}$	$\mu + \alpha_2 + \beta_3 + \alpha\beta_{23(4)}$
3	$\mu + \alpha_3 + \beta_1 + \alpha\beta_{31(1)}$	$\mu + \alpha_3 + \beta_2 + \alpha\beta_{32(2)}$	$\mu + \alpha_3 + \beta_3 + \alpha\beta_{33(3)}$

Table A: Parameters of the APC-I Model from Equation (1).
Notes: This table was reproduced from Luo and Hodges (2022), Table 1.

Important to the APCI-I model is how it differs from the classical model in terms of age-by-period interactions. What Luo and Hodges mean by interaction is in it's purely statistical definition: the differential effects of one variable dependent on the level of the other variable marks its interaction.[267] That is, temporal patterns can be attributed to cohort effects only when significant age-by-period interactions exist.[268] Age-by-period interactions that are not significant during historical social shifts are undifferentiated across age groups, which indicates an absence of cohort effects.

[264] Ibid., 1174.
[265] Ibid.
[266] Ibid., 1168.
[267] Ibid., 1174.
[268] Ibid.

The testing procedure developed by Luo and Hodges will not be presented here-in as it is not suitable for aggregate data such as mortality rates. The modified APC-I model for aggregate data will be presented below.

4.4.3 APC-I Poisson Model for Aggregate Data

The APC-I model must be adapted to the aggregate data that I will be working with. As Luo and Hodges state in their article, the interaction term is confounded with the error term due to how the observations are arranged in age-by-period cross-classification.[269] Essentially, there is no replication per cell as the APC-I model is designed for individual level count data, not an aggregate score. For example, observation #1, age 15 in 2015 has a reading score of 15, versus a suicide rate of 25 per 100,000 for observation #101, age 35 in 2018; the aggregate suicide rate will be the same for all observations aged 35 in 2018 (#101 to #200 = 25 per 100,000) but the reading score will change for each observation aged 15 in 2015 (#1 = 15, #2 = 14, …, #100 = 10).[270]

That said, the APC-I model can still be used if the outcome variable (number of suicides) is expressed as count data, controlled via a population offset term, and run through a logistic or Poisson regression.[271] The works of Yunmei Lu and Liying Luo (2020) and Lu et al. (2022) will be used as guides in implementing the Poisson regression into the APC-I model. The steps remain relatively the same.

(1) First, a global deviance test is required to ascertain if a cohort effect exists and requires further analysis. The deviance score of the full APC-I model (**Equation (1)**) is compared against a reduced model of age-by-period main effects only:

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[269] Ibid., 1200-1201.
[270] Ibid.; Yunmei Lu and Liying Luo, "Cohort Variation in U.S. Violent Crime Patterns from 1960 to 2014: An Age–Period–Cohort-Interaction Approach," *Journal of Quantitative Criminology* 37, no. 4 (December 2021), 1057.
[271] Luo and Hodges, "The Age-Period-Cohort-Interaction Model," 1200.

Equation (2)[272]

$$g\left(E\left(Y_{ij}\right)\right) = \mu + \alpha_i + \beta_j$$

The results of the two Poisson regressions are run through an analysis of variance (ANOVA) test. A significant test result indicates that the model containing the age-by-period interaction term provides a better fit and that a cohort effect may exist.[273]

(2) Secondly, the inter-cohort deviation is tested by computing the average of the age-by-period interaction terms contained in each cohort.[274] As can be seen with **Equation (3)** below, the diagonal of cohort 3 in Table A above is summed and averaged according to its *k* value:

Equation (3)[275]

$$\lambda_{(3)} = \sum (\alpha\beta_{11(3)}, \alpha\beta_{22(3)}, \alpha\beta_{33(3)})/3$$

A positive λ indicates that this cohort has a higher rate of suicide than the predicted suicide rate determined by age-and-period effects only, whereas a negative λ would indicate the opposite.[276] To test if the deviations are statistically significant, a z-test is conducted using the mean cohort deviations and the mean standard errors that were estimated by the APC-I model.[277]

(3) Lastly, the intra-cohort life-course dynamics are measured for each cohort by testing and estimating the linear change in the age-by-period interaction terms contained in each cohort.[278] The life-course dynamic is measured with a linear orthogonal polynomial contrast of the respective age-by-period interaction terms to determine if the average suicide rate increases, decreases, or remains the same.[279] In combination with the results from the previous step, if a significant positive

[272] Lu and Luo, "Cohort Variation in the U.S," 1057-1058.
[273] Ibid., 1058.
[274] Ibid., 1057-1058.
[275] Ibid., 1058.
[276] Ibid.
[277] Ibid.
[278] Ibid.
[279] Ibid.

cohort deviation (λ) is measured, three possibilities exist: (1) an increase or accumulation if the intra-cohort slope is significantly positive; (2) an equilibrium or decrease if the intra-cohort slope is significantly negative; or (3) plateau if the intra-cohort does not significantly deviate from zero.[280]

P-values as a measure of statistical significance will be provided yet are used simply as a reference for all except the intra-cohort slope.[281] As I am using population level data and my inferences do not reach beyond the period that I am studying, 1950 to 2019, effect sizes of the parameter estimates can be interpreted as population parameters.[282] Only in terms of generalisability to a 'superpopulation' such as current and future cases, or when referring to a supranational geographical area are *p*-values considered relevant for population level data.[283] As Neal Alexander puts it, a superpopulation is "[comprised of] 'all possible persons that ever were or ever could be targets of inference'", which is not the case for this thesis.[284]

There is also a body of literature that speaks to the false prophet status the *p*-value is afforded. Three major points arise across most publications: (1) null hypothesis testing is not dichotomous; it is probabilistic reasoning that is easily skewed by sample size.[285] (2) Replicability should be emphasised rather than the value of *p*. Some scholars go so far as to advocate changing the standard *p*-value threshold of 0.05 to 0.005 to enhance the likelihood of replicability.[286] A 0.005

[280] Ibid.
[281] Ibid., 1059; Neal Alexander, "What's More General than a Whole Population?," *Emerging Themes in Epidemiology* 12, no. 1 (August 25, 2015), 2-3.
[282] Lu and Luo, "Cohort Variation in the U.S," 1059.
[283] Alexander, "What's More General," 3.
[284] Ibid., 2.
[285] Valentin Amrhein, Sander Greenland, and Blake McShane, "Scientists Rise up against Statistical Significance," *Nature* 567, no. 7748 (March 2019): 307; Jacob Cohen, "The Earth Is Round (p < .05).," *American Psychologist* 49, no. 12 (December 1994), 998.
[286] Daniel J. Benjamin et al., "Redefine Statistical Significance," *Nature Human Behaviour* 2, no. 1 (September 1, 2017), 7.

threshold increases the rates of replication by approximately double.[287] But, even this is contested, as context and the interpretation of *p*-values is deemed more important.[288] (3) By that token, more emphasis should be placed on effect size and confidence intervals. The effect must be provided with the *p*-value; knowing the difference with the direction is imperative.[289] All this being said, *p*-values are not as important for population statistics but will still be listed to provide context, while the coefficients take the forefront of the analysis.

Sum-to-zero coding was used in the APC-I model in R. Normally, APC models use an age or period category as a reference group. For the APC-I model, sum-to-zero coding means that the coefficients that are estimated are calculated from the deviation of the grand mean of all observations. The main benefit is that interaction terms represent the deviation from the expected values based on the main effects, simplifying their interpretations.

4.5 International Classification of Diseases (ICD)

The classification of deaths in Canada follows the ICD, an international standard maintained by the World Health Organisation (WHO). The ICD went through five revisions over the period of this study, from ICD-6 to ICD-10. Changes between ICD-6 and ICD-7 indicate a marginal increase of 3% for suicide for the same data.[290] According to a compatibility report by the U.S Department of Health, Education, and Welfare in 1975, the ICD-7 and ICD-8 revisions had a slight effect on deaths of intentional self-harm, with an increase of 6%.[291] The 6% increase

[287] Ibid.
[288] Rebecca A. Betensky, "The P-Value Requires Context, Not a Threshold," *The American Statistician* 73, no. sup1 (March 29, 2019), 117.
[289] Jacob Cohen, "The Earth Is Round (p < .05).," *American Psychologist* 49, no. 12 (December 1994), 1001.
[290] Alice B. Dolman and Mattie M. Faust, *Comparability of Mortality Statistics for the Sixth and Seventh Revisions: United States, 1958* (U.S. Public Health Service, National Center for Health Statistics, 1965), 297.
[291] A. Joan Klebba and Alice B. Dolman, *Comparability of Mortality Statistics for the Seventh and Eighth Revisions of the International Classification of Diseases, United States*, Vital and Health Statistics : Series 2, Data Evaluation and Methods Research ; No. 66 (Rockville, Md: U.S. Dept. of Health, Education, and Welfare, Public Health Service, Health Services and Mental Health Administration, National Center for Health Statistics, 1975), 50.

can be in part attributed to changes in how deaths of uncertain intention were classified, with self-accomplished deaths making up 31% of the new categories in ICD-8.[292] Generally speaking, Thibodeau found that the ICD-7 to ICD-8 revision was the only outlier among iterations.

That said, Benjamin J. Pearson-Nelson et al. found no statistically significant differences in suicide rates within the 71 countries that were measured, between ICD-6 and ICD-7, ICD-7 and ICD-8, and ICD-8 and ICD-9.[293] Though, they found a statistically significant difference in suicide rates between ICD-9 and ICD-10. Further, the ICD-10 has not only more categories for suicides but also for deaths of undetermined causes and undetermined intent.[294] Thus, it may decrease the number of reported suicides. It would be safe to assume that suicide rates in Canada may be slightly lower than what is reported since the implementation of the ICD-10, but it is not known for certain. Nonetheless, differences in classification also vary between country and period, but are not controlled for phenomena that may have impacted suicide rates between ICD revisions, nor social, religious, legal, gender, sex, sexuality, and cultural norms that may have affected the classification of suicide between countries.

On the contrary, Statistics Canada reported that the changes from ICD-9 and ICD-10 had no statistically significant impact on deaths classified as intentional self-harm, with a preliminary comparability ratio of 1.0000.[295] Being as the study performed by Statistics Canada refers specifically to Canadian suicide data, I feel comfortable in not adjusting the data for the difference between ICD-9 and ICD-10 highlighted by Pearson-Nelson et al. Suicide data inherently carries an air of suspicion with underreporting – it is a known unknown and an unfortunate detractor. No

[292] Ibid., 37.
[293] Benjamin J. Pearson-Nelson, Lawrence E. Raffalovich, and Thoroddur Bjarnason, "The Effects of Changes in the World Health Organization's International Classification of Diseases on Suicide Rates in 71 Countries, 1950–1999," *Suicide and Life-Threatening Behavior* 34, no. 3 (2004), 333.
[294] Ibid., 335.
[295] Leslie Geran et al., "Comparability of ICD-10 and ICD-9 for Mortality Statistics in Canada," *Statistics Canada*, no. 84 (2005), 6 & 31.

less, the differences between ICD revisions are minimal enough to not impact my thesis. Thus, and in the same vein as similar studies such as Thibodeau, and Légaré and Hamel, the statistics data on suicide needs not be adjusted.

4.6 Underreporting

Underreporting is a serious issue and must be discussed in all research that pertains to official data on suicide. Questions pertaining to accuracy of the statistics are often brought up because suicide may be underreported in many jurisdictions, for various reasons. Coroner methodologies may have or continue to differ between administrative regions and various social, cultural, religious, financial, and legal factors, among other things, may lead family, friends, coroners, and other professionals to disguise the death, wittingly or unwittingly, as unintentional or undetermined.[296]

To highlight the point, an interesting study performed by Nathalie Auger et al. found that if deaths of undetermined intent were included with suicide statistics for all Canadian provinces, Québec would cede first rank for the highest suicide rate to the territories (they were grouped), for the years 1991 to 2001.[297] All provinces and territories would see their suicide rate increase by at least 10%, with the lowest increase at 10.1% for New Brunswick and the highest increase at 26.5% for the Territories.[298] Of course, not every death of undetermined intent is a suicide, but the authors point to some countries such as Poland that have had rates increase simultaneously over time for both suicides and deaths of undetermined intent, indicating a possible co-linear effect.[299] In any

[296] Nathalie Auger et al., "Suicide in Canada: Impact of Injuries with Undetermined Intent on Regional Rankings," *Injury Prevention* 22, no. 1 (February 2016): 76.
[297] Ibid., 76.
[298] Ibid.
[299] Ibid.

case, it is important to remain sensitised to the problem when working with statistics pertaining to suicide.

When taking into consideration ethnic and cultural background, and gender, underreporting seems far more of an issue. Silvia Sara Canetto and Isaac Sakinofsky find that female deaths are more likely to be classified as "not suicide" or misclassified; in a study of all Canadian provinces, the data suggests that the sex gap may not be as pronounced as is reported due to misclassified deaths.[300] This poses a serious question as to the often-cited male preponderance of suicide rates. Similar is seen with the reporting for undetermined deaths for Black women. Rockett et al. find that the ratios of deaths of undetermined intent for Black women in the United States aged 35-54 and 85 years and older between 1999 and 2002 is three times larger than their respective White counterparts, therefore indicating a possible misclassification of an individual's cause of death.[301] This also has larger research implications as statistical rates often point to areas that require attention and receive more funding (male sex-ratios, for example).

[300] Silvia Sara Canetto and Isaac Sakinofsky, "The Gender Paradox in Suicide," *Suicide and Life-Threatening Behavior* 28, no. 1 (March 1998): 7-8.
[301] Rockett et al, "The Black–White Suicide Paradox," 2167.

Chapter 5: Results[302]

The results will show that male and female youth suicide rates increased across all provinces as of the 1960s. The rise in youth suicide rates during the latter half of the twentieth century directly contradicted Durkheim's 'traditional' suicide curve, which asserts that suicide rates increase linearly with age. This section will first cover the descriptive statistics as it relates to inverting the traditional rate curve, followed by an analysis of rate trends for 15–24-year-olds. Lastly, provincial sex-ratios will be compared, with an in-depth analysis of shifting sex-ratios over the decades. The analysis on sex-ratios will show that its use is limited when covering a long period of time and that it is far more complex than how it is often superficially referred to in journal articles on suicide.

The descriptive statistics will be followed by the APC-I analysis. The APC-I analysis will first present the age and period main effects. The age effects will show that throughout the entirety of the period, suicides occurred in the middle-age adult groups between 40 and 64, for males and females. The period effects categorically highlight the lethality of the periods marked by the emergence of youth suicide rates – not only did youth commit suicide at increased rates but so did other age groups. It is important to note that these results were reflected across all provinces, yet they do not discount the severity of youth suicide.

The estimated cohort effects measured through the interpretation of inter-cohort deviation and intra-cohort slope show that the period of youth was a difficult time across all provinces and sex. Few provinces had male cohorts with estimated cohort effects that persisted throughout their lifetime, with significant effects concentrated in the 1960s and early 1970s. Although, cohorts born

[302] For parsimony, the provinces will be referred to by their abbreviation and rates will be expressed as 'rate' per 100,000.

in the 1960s and early 1970s had strong but momentary cohort effects for males in every province for youth and early adult age groups, marking the precarity of these age groups during these periods. Females had their cohort effects across all provinces begin in the decade preceding the twenty-first century that continued into the 2000s, finding little commonality with their male counterparts.

The results will demonstrate similar suicide patterns across provinces, suggesting the influence of social forces on suicide rates. Clearly, there is a need to analyse Canadian suicide through a sociological lens as to best understand the social roots of suicide that persist to this day. In addition, the results will emphasise a sex-disaggregated approach to analysing suicide. Suicide rates and trends differ between males and females, and attention to female suicide is equally important, despite their numerically lower rates.

5.1 Descriptive Statistics

The descriptive statistics for males and females conclusively demonstrate that the 'traditional' Durkheimian curve no longer exists as of the 1960s across all provinces for males and females. Whereas rates increased with age prior to the 1960s and youth suicide was nearly non-existent, the traditional suicide regime is toppled by a rapid increase in rates for youth age groups 15-19 and 20-24. In many cases, the rates for youth match and exceed the rates of age groups that were previously most 'at risk' and these high rates for 15- to 24-year-olds have not returned to 'normal' once they declined from their peak. Essentially, the shift in youth suicide trends was not a singularity and they were maintained after their initial peak. All tables and figures for the descriptive statistics can be found in the Appendix Tables 19-31 and Figures 31-54.

The rise in rates across provinces as of the 1960s was felt most by males in the 15-19 and 20-24 age categories. For example, rates for males in ON aged 15-19 and 20-24 in 1950-1954 were

2.3 and 4.8, respectively. As of 1975-1979, rates were 14.8 and 28. For ON females, rates shifted from 1.3 and 3.4 in 1950-1954 to 4.2 and 7 in 1975-1979 – a markedly smaller increase. QC saw a similar shift, but the peak was recorded later with rates for males shifting upwards from 2.9 and 3.4 in 1950-1954 to 32.3 and 43.3 in 1995-1999. Rates for females in QC shifted from 0.6 and 2.3 to 8.7 and 7.2 over the same two periods. As seen here and for other provinces, rates for males saw a far larger numerical increase than females. That said, it does not discount the fact that some increases for females were proportionally higher. Suicide rates for female youth were nearly non-existent prior to the 1960s; QC female rates for 15-19 increased 14.5 times whereas rates for males increased by a magnitude of 11.1, for the rates mentioned above.

The initial increase in youth suicide was a primarily male event as the sex-ratios for each province and period indicate, followed by a reversal. The sex-ratios for youth as of the 1960s are the highest recorded among age groups, as will be shown below. The height of the sex-ratio is followed by a reversal that is not found to the same degree for older age groups. This reversal is especially present among 15- to 19-year-olds, with an average sex-ratio of 2.04 across the provinces for the period 2010 to 2019. The sex-ratio goes as low as 0.99 for Manitoba and 0.88 for Saskatchewan in 2010-2014. Thus, indicating that females were committing more or nearly as many suicides as males, and the sex-ratio was far below the global average across all provinces of 3.71:1, male-to-female.

The rates and sex-ratios will be explored further in the following section from multiple perspectives, including rates for youth and sex-ratios by province, and average sex-ratios by age and period. The descriptive statistics section will show, even before examining the APC-I model, that these momentous changes in suicide trends signal a break with the paradigmatic analysis of suicide through prevention, risk factors, and psychopathology. The simultaneous wide-ranging

changes in the suicide regime spanning all provinces and both sexes calls for an emphasis on a sociological lens.

Suicide rates across provinces rose and fell *in unison*. In addition, the reduction in rates during the 1990s and early 2000s was during a period when prevention methods were only in their inception and piecemeal across the provinces, with no national plan or serious coordination between provinces. Individuals born in the second half of the twentieth century experienced major changes that impacted their perception of the world. These shifts are reflected in the suicide rates and were caused and must be explained, at least in part, by multi-faceted and interlinked structural forces.

5.1.1 Flattening of the Rate Curve by Age

As seen in Tables 2 and 3 or in Figures 1 and 2 (the rest are in the Appendix), suicide rates would increase with age up to the 1960s, sometimes peak in the age categories of 40-54, gently decrease, and almost always end above the rates logged by the younger groups of 15 to 24. The provinces of ON, BC, or MB are good examples of this trend, for both males and females.

Age Group	Period													
	1950-1954	1955-1959	1960-1964	1965-1969	1970-1974	1975-1979	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014	2015-2019
15-19	7.97	6.28	7.96	11.75	12.74	22.28	19.66	17.91	16.57	10.52	11.12	8.25	10.21	11.98
Cohort	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000
20-24	14.66	14.55	17.74	23.73	35.19	38.73	27.89	27.88	25.61	21.22	19.33	17.33	15.05	13.91
Cohort	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995
25-29	15.28	18.29	15.25	25.74	30.24	34.09	30.93	28.76	27.07	21.09	19.41	16.82	16.21	17.36
Cohort	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990
30-34	24.28	14.62	20.91	22.93	27.50	25.51	29.30	23.58	27.97	23.25	19.64	15.89	19.47	15.28
Cohort	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985
35-39	17.48	19.00	20.85	28.26	31.53	24.57	24.25	21.10	28.06	24.30	26.80	20.45	21.13	14.74
Cohort	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980
40-44	35.61	23.81	28.13	30.76	32.80	31.40	25.61	23.12	27.40	24.02	23.09	23.76	20.17	16.32
Cohort	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975
45-49	35.08	28.62	31.18	28.77	37.99	36.29	21.37	29.35	22.84	23.68	23.38	22.91	23.85	23.77
Cohort	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970
50-54	49.54	36.40	37.71	34.40	42.02	37.52	28.78	25.31	22.59	24.63	25.18	22.07	24.15	19.84
Cohort	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965
55-59	45.55	44.05	37.67	38.25	33.90	33.79	31.21	27.12	21.76	19.74	22.20	24.72	27.45	23.82
Cohort	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960
60-64	61.48	37.20	40.24	39.19	33.58	28.64	27.07	23.80	18.57	22.56	21.10	18.00	21.34	18.29
Cohort	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955
65-69	40.84	42.58	39.15	35.69	27.88	34.79	25.69	24.31	22.56	17.66	16.96	18.28	17.68	17.66
Cohort	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950
70-74	40.54	38.58	32.95	44.72	35.32	28.25	26.24	26.54	19.02	21.69	19.37	16.95	20.84	16.96
Cohort	1880	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945
75-79	56.27	42.22	51.76	49.67	35.16	35.20	31.93	29.61	24.44	23.24	21.90	22.84	24.41	20.86
Cohort	1875	1880	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940
80-84	53.00	52.36	28.25	49.50	41.43	35.58	45.50	29.31	42.47	30.93	19.03	26.53	34.15	20.49
Cohort	1870	1875	1880	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935

Table 2: Suicide rates for males in British Columbia, 1950-2019.

Age Group	Period													
	1950-1954	1955-1959	1960-1964	1965-1969	1970-1974	1975-1979	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014	2015-2019
15-19	0.00	1.54	2.71	2.26	5.27	6.14	4.39	6.29	7.93	6.49	8.90	16.22	18.13	18.52
Cohort	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000
20-24	3.24	1.74	1.71	4.44	6.36	8.85	6.32	6.62	6.85	5.55	8.16	11.66	13.46	17.43
Cohort	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995
25-29	4.71	5.18	5.60	3.68	6.38	7.88	9.21	7.52	11.08	8.58	7.39	7.00	7.37	13.96
Cohort	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990
30-34	1.66	6.61	5.34	3.88	9.66	9.69	8.02	8.12	6.85	5.03	8.91	8.91	7.79	12.71
Cohort	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985
35-39	5.23	3.35	8.34	9.23	10.28	11.85	6.61	9.50	7.30	6.97	8.98	8.84	6.93	8.55
Cohort	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980
40-44	6.14	7.31	1.74	8.77	7.87	10.50	6.01	8.37	5.63	4.95	5.92	7.66	12.55	5.29
Cohort	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975
45-49	7.35	6.36	7.57	7.30	11.23	10.13	10.71	8.17	5.20	5.74	5.05	7.16	8.76	5.44
Cohort	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970
50-54	5.56	10.43	8.89	9.88	11.51	11.54	12.35	6.55	6.33	7.11	5.87	7.67	8.32	8.73
Cohort	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965
55-59	3.05	5.96	5.45	13.95	10.50	10.00	7.91	8.41	4.52	4.32	5.49	7.52	6.54	8.43
Cohort	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960
60-64	6.98	6.90	6.53	11.48	12.38	8.82	8.28	4.10	4.43	4.71	4.51	7.56	6.23	6.69
Cohort	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955
65-84	6.97	10.43	5.28	3.61	6.60	9.68	6.68	6.64	3.44	3.38	2.75	3.47	2.66	3.56
Cohort	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950

Table 3: Suicide rates for females in Manitoba and Saskatchewan, combined, 1950-2019.
Notes: The age groups 65-69 to 80-84 were combined to comply with the output requirements of Statistics Canada at the QICSS lab.

The increase in youth suicide led to the flattening of the suicide rate curve across all provinces. As seen in Figure 1, some provinces also saw an inversion of rates, with higher rates for youth and lower rates for older age groups. This trend was more discernible for males, although some provincial rates for females also had a downward trend. For example, rates for males in QC as of 1970-1974 began to invert the scale with the 20-24 age category having almost the highest rates. The inversion is complete by the 1990s when the slope of the rate curve is trending downwards by age group. The same can be perceived for the male rates of SK, MB, and AB, whereas BC and ON male rates tended to stagnate in later periods.

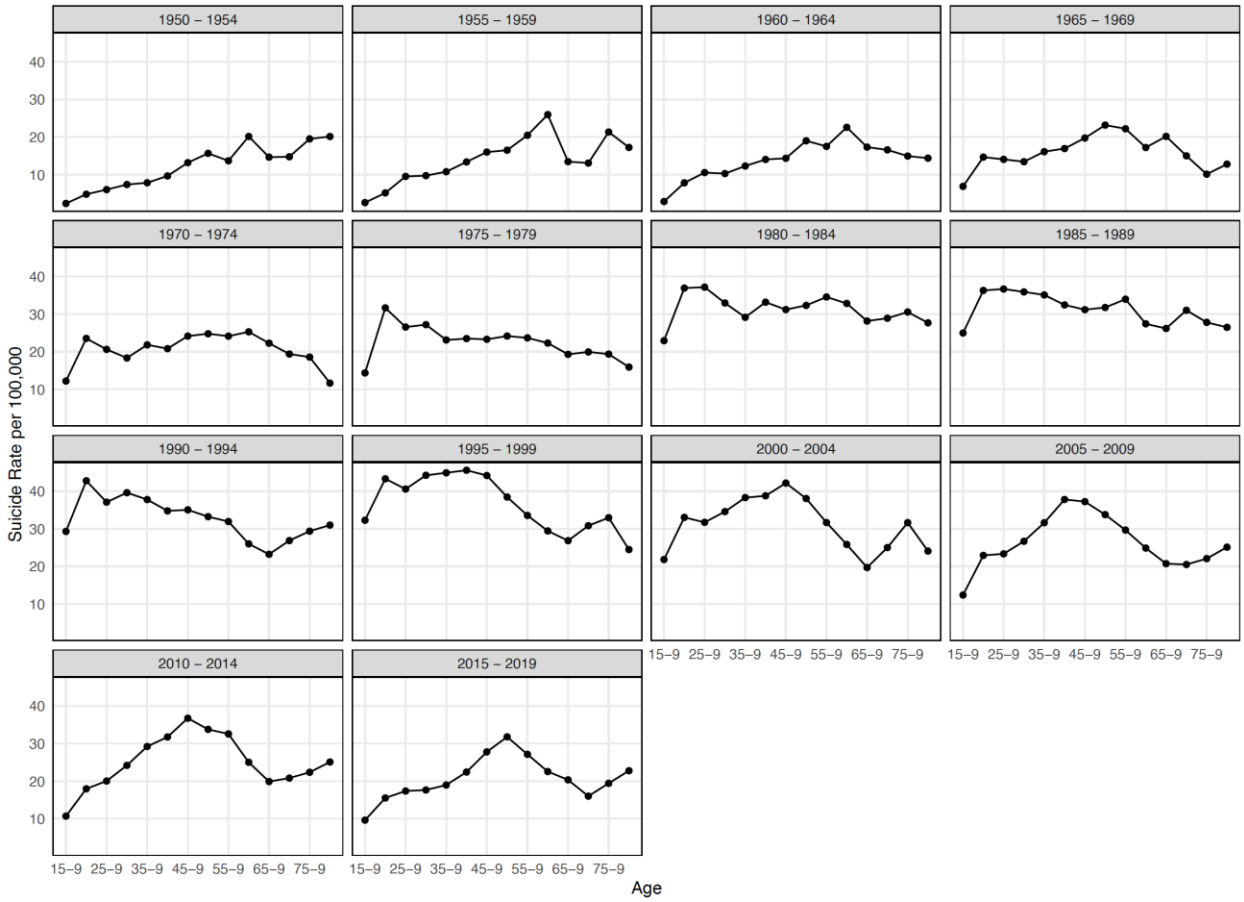

Figure 1: Suicide rates per 100,000 by period and age for males in Québec, 1950-2019.

Slope changes for females differed greatly between groups of provinces. ON, QC, and BC saw their rates flatten out as of the 1990s into the 2000s, as seen in Figure 2 for ON. Though, there was a serious change in slope for SKMB, and AB at the turn of the century and not during the same period as males.[303] Figure 3 exemplifies how suicide rates for youth began to match and exceed the rates for middle-age adult groups in AB females. The rate curve for AB began to change as of the 1990s and resembles that of their male counterparts as of 2005-2009, as seen in Figure 3. The same is seen in SKMB but to a larger degree, the inverse of rates is far more obvious, with a steeper decline. In sum, the Durkheimian curve is no more for females than it is for males.

[303] SK and MB will be referred to as SKMB for females as their suicide rates are combined for the descriptive analysis only.

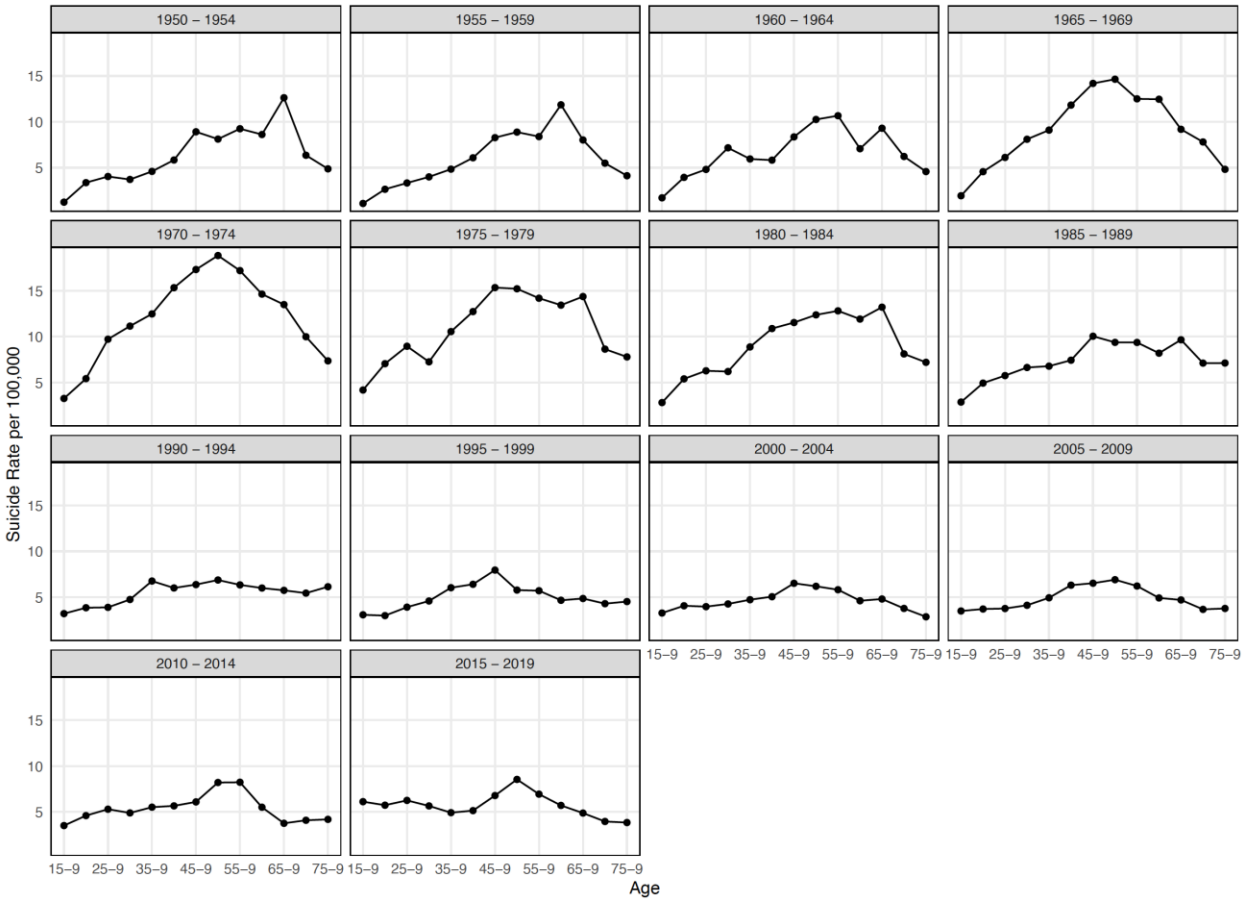

Figure 2: Suicide rates per 100,000 by period and age for females in Ontario, 1950-2019.

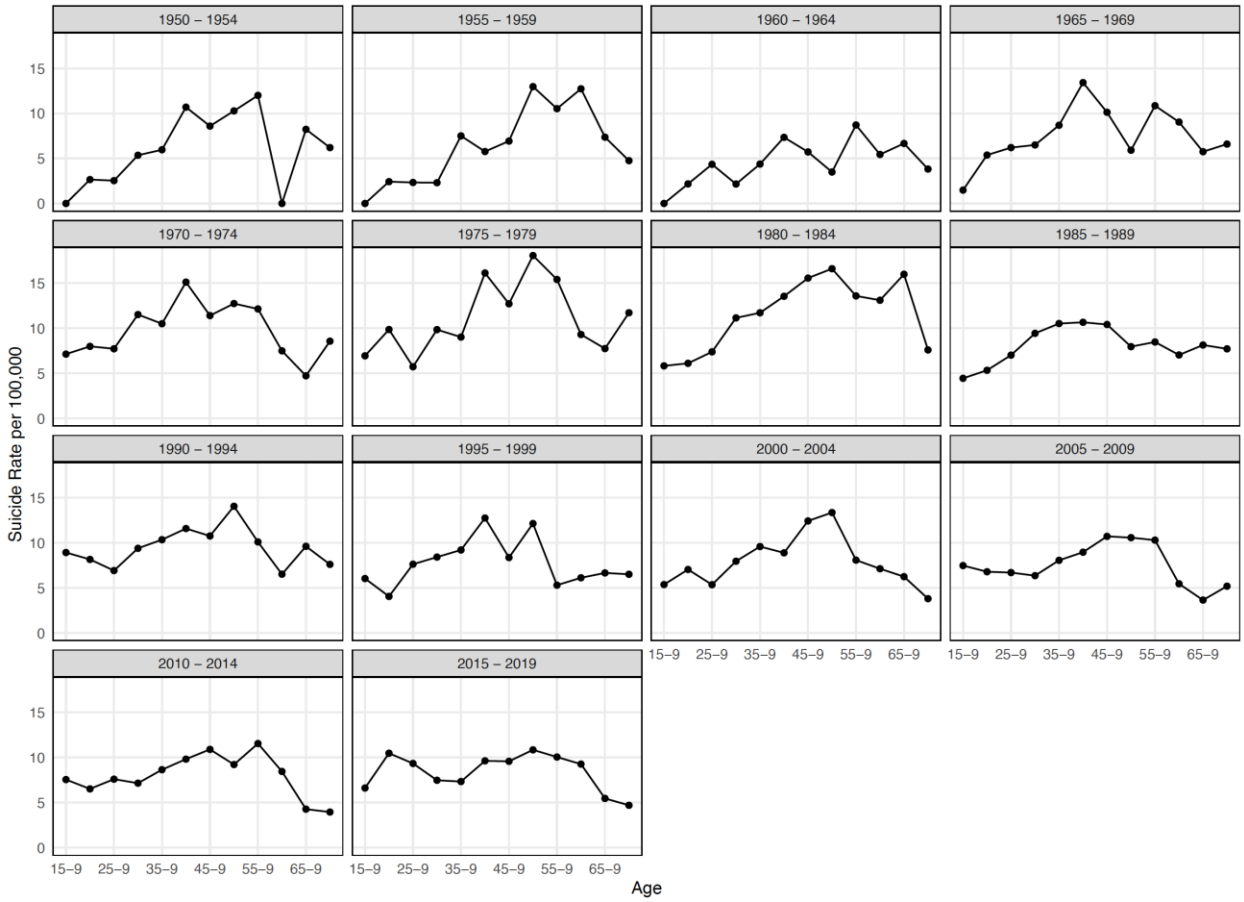

Figure 3: Suicide rates per 100,000 by period and age for females in Alberta, 1950-2019.

This change is significant as rates for youth increased and did not return to their pre-increase 'normal'. Granted, rates increased across the age categories in tandem with younger age groups. That said, rates for youth aged 15-24 increased at a greater rate and in most cases listed higher rates than all other age groups for multiple consecutive periods. We see the extreme of this scenario in QC males for the 20-24 group, in Figure 1. Their rates are either at the highest or near the top from 1970-1974 through to 1995-1999; a similar pattern is witnessed across all provinces with varying periods of peak rates. For females, the highest rates tend to concentrate towards the middle-age groups for the provinces of QC, ON, Atlantic Canada, and AB (up to 2005-2009 for the latter two, the rates increase even higher for youth as of 2010-2014). SKMB are the anomaly

for female rates. Their rates mirror their male counterparts, with higher rates for the 15-29 age groups as of 1990-1994 that persist into 2015-2019.

All provinces, male and female, witnessed a complete change in their rate curve period-over-period as of the 1960s. Rates for 15- to 24-year-olds began to increase and peaked at different times for males and females. Although males and females experienced different periods of high suicide rates, they both saw a shift in their rate curves turning negative. Thus, indicating a new regime of suicide – this change was not novel nor temporary. Rates did subside slightly for most, but they have not returned to rates of near non-existence seen under the traditional Durkheimian regime.

5.1.2 Rate Trends for 15- to 24-year-olds

Rates in the 15-24 category began to rise in the 1960s, diminished at the turn of the century and have yet to return to the rates seen prior to their initial increase. In some provinces and especially for females, rates increased into the 2000s after their first peak in the second half of the twentieth century and peaked again in the last study period of 2015-2019. The 20-24 category had the most significant increases, highest rates, and was the deadliest across the board, with some minor exceptions for females. The complete set of Figures can be found in the Appendix, Figures 43-46.

More importantly, rates for female youth maintained the bulk of their increase into the twenty-first century unlike their male counterparts. Whereas male youth saw a significant reduction in rates among most provinces – though still well above their rates before the emergence of youth suicide – female youth either stagnated at much higher rates or increased thereafter across every province.

The rate increases among males aged 20-24 began earlier than for those aged 15-19, starting as early as 1955-1959. ON is the first province for males to see an increase in suicide rates for 20- to 24-year-olds. As seen in Figure 4, rates for 20- to 24-year-olds in ON climb from 7.78 in 1950-1954 to 10.63 in 1954-1959. For females, BC sees a similar magnitude increase from 4.47 to 7.3, with no other province seeing any increase this early in the timeline.

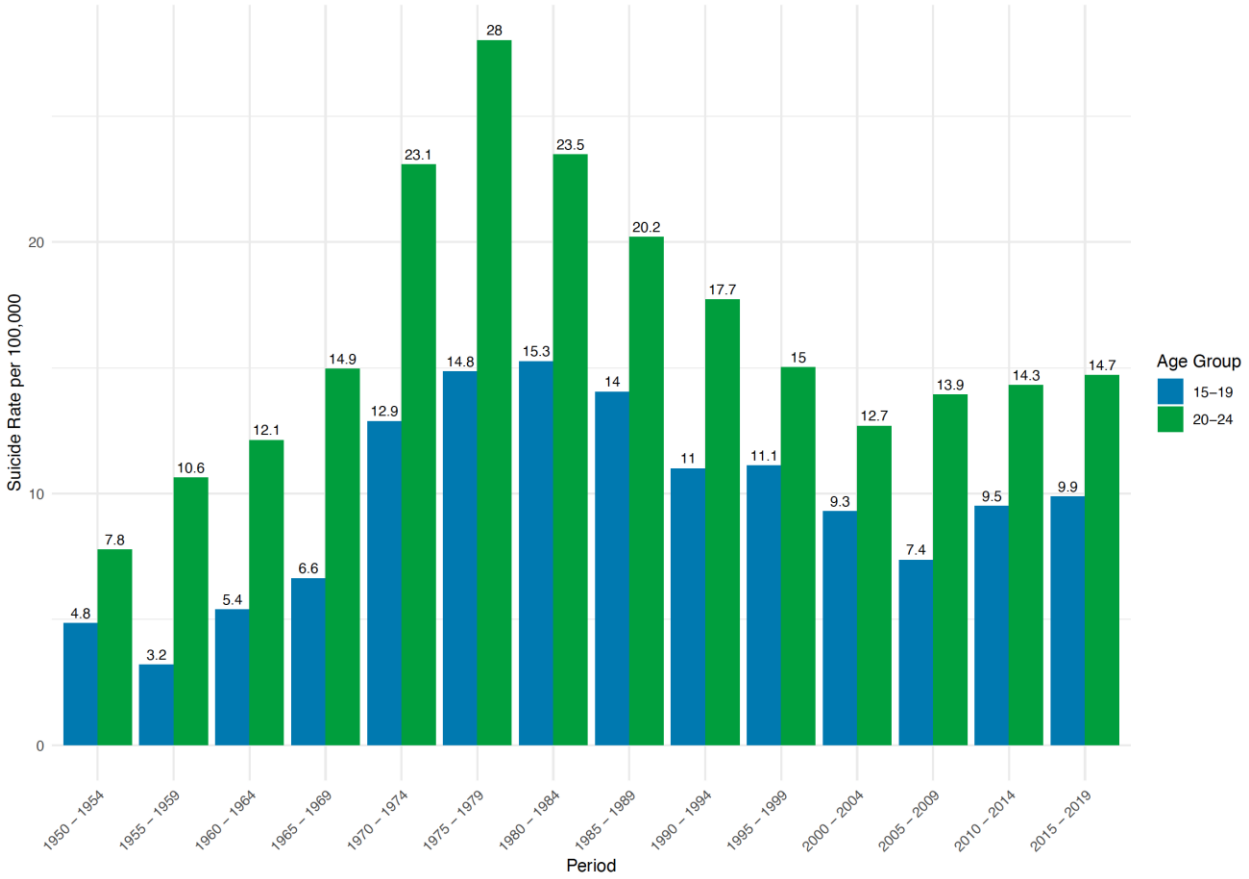

Figure 4: Suicide rates per 100,000 for 15-19 and 20-24 age categories for males in Ontario, by period, 1950-2019.

15- to 19-year-olds saw their first notable increase in rates come a bit later. For males, ON, QC, and BC had rates above 10 as of 1970-1974. The same pattern is witnessed for females of the same provinces, in figure 5. Females in ON see a shift from 1.9 in 1965-1969 to 3.3 in 1970-1974. The move from 1.9 to 3.3 may seem inconsequential but it still represents a 58% increase and a 300% increase from 1.1 in 1955-1959. Rates for AB and the combined rates for SK and MB for

females also saw its debut in 1970-1974. Females in AB changed from 0 for the periods between 1950 and 1964, to 7.11 in 1970-1974. Essentially, every province saw a substantial increase in 15-19 suicide rates prior to and including 1970-1974.

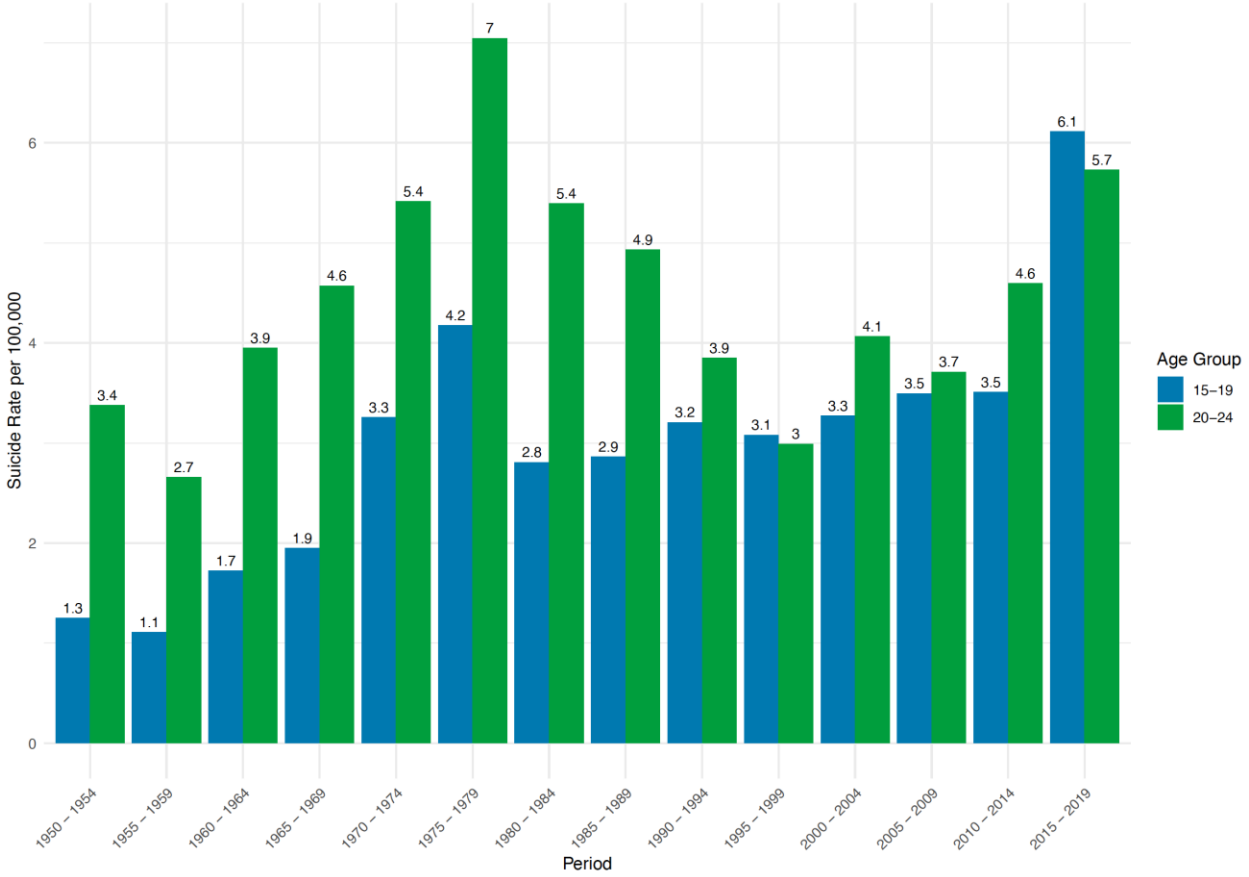

Figure 5: Suicide rates per 100,000 for 15-19 and 20-24 age categories for females in Ontario, by period, 1950-2019.

This escalation in rates for 15- to 24-year-olds had differing results for males and females. Rates for males peaked earlier and with higher rates. Rates for 15-19 and 20-24 began their ascent earlier for BC and ON which translated into earlier peaks in 1975-1979 and 1980-1984. Ontario sees a peak for 15- to 19-year-olds in 1980-1984 at 15.3, and 20- to 24-year-olds in 1975-1979 at 28. BC peaks for both age groups in 1975-1979 at 22.3 for 15- to 19-year-olds and 38.7 for 20- to 24-year-olds. MB and SK are the only other province that nearly match the timing of BC and ON.

On the other hand, males in QC, Atlantic Canada, and AB all peaked after the 1980s. Rates in QC for 15-19 and 20-24 both peaked in 1995-1999, at 32.26 for 15-19 and 43.28 for 20-24 (nearly matching the highest ever recorded rate in QC during this timeline at 45.55 for 40-44). Rates for AB males aged 20 to 24 share some similarities with QC. As seen in Figure 6, the linear increase in rates for AB males aged 20-24 peaks in 1990-1994 at 39.6. Atlantic Canada mirrors QC more with the linear escalation in rates, but the 20-24 category (30.3 in 1980-1984) peaks slightly earlier than the 15- to 19-year-olds (18.7 in 1990-1994). That said, the rates for 20-24 persist at elevated levels and return to 28.5 in 2015-2019, more than 8 times their rate in 1950-1954 (3.4).

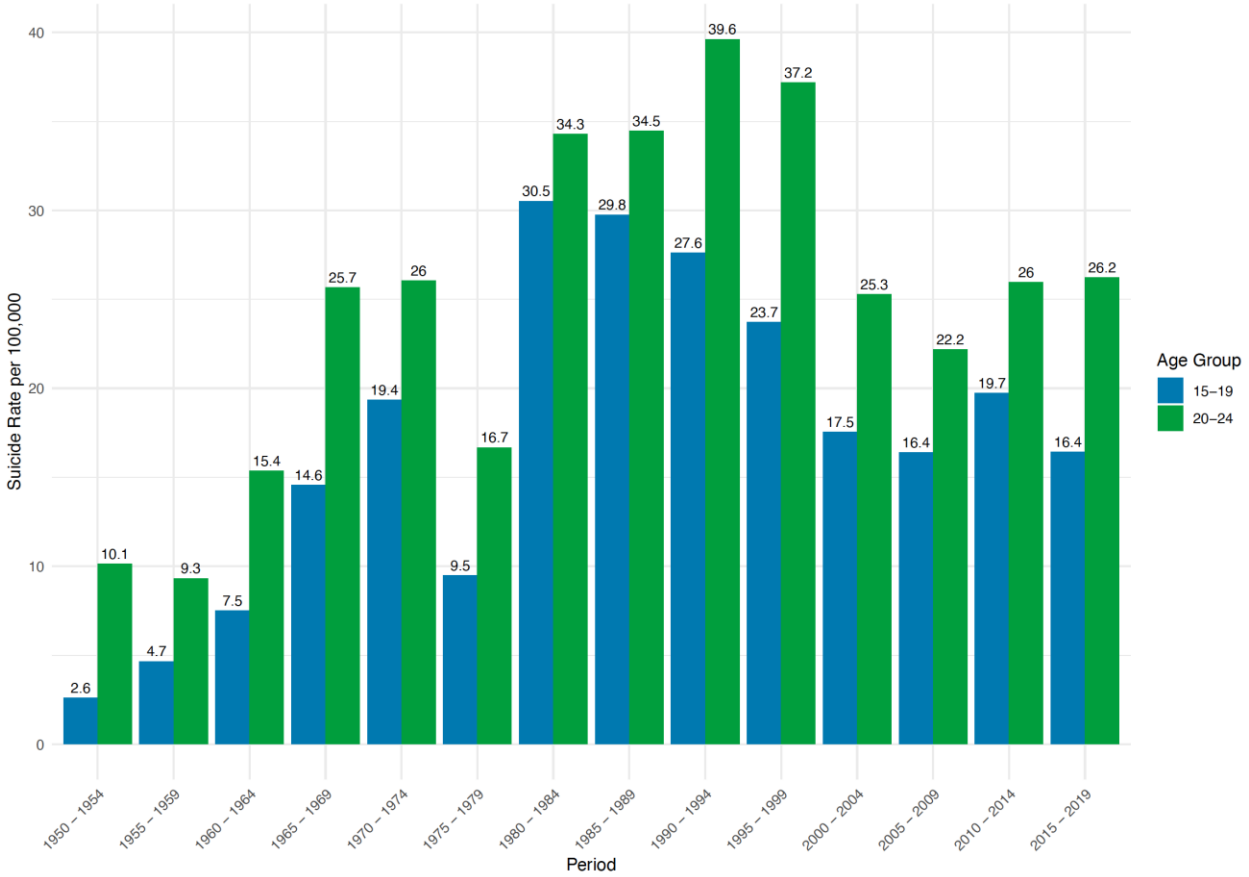

Figure 6: Suicide rates per 100,000 for 15-19 and 20-24 age categories for males in Alberta, by period, 1950-2019.

Unlike the others, males in AB, MB, SK, the Atlantic provinces, regain their losses after a slight drop from their peaks. Rates rarely if ever drop below 20 for 20–24-year-olds and never fall below 15 for 15–19-year-olds. Exceptionally, as seen in Figure 7, SK sees many instances of rates increasing above 30, with MB matching them once. These trends highlight how the high rates for youth have not reverted to their Durkheimian past. Moreover, rates for male youth are nearing their previous highs for the Atlantic provinces, SK, AB, and MB. Lastly, the 20-24 age category dominates in rates for males and females, with some exceptions for the latter.

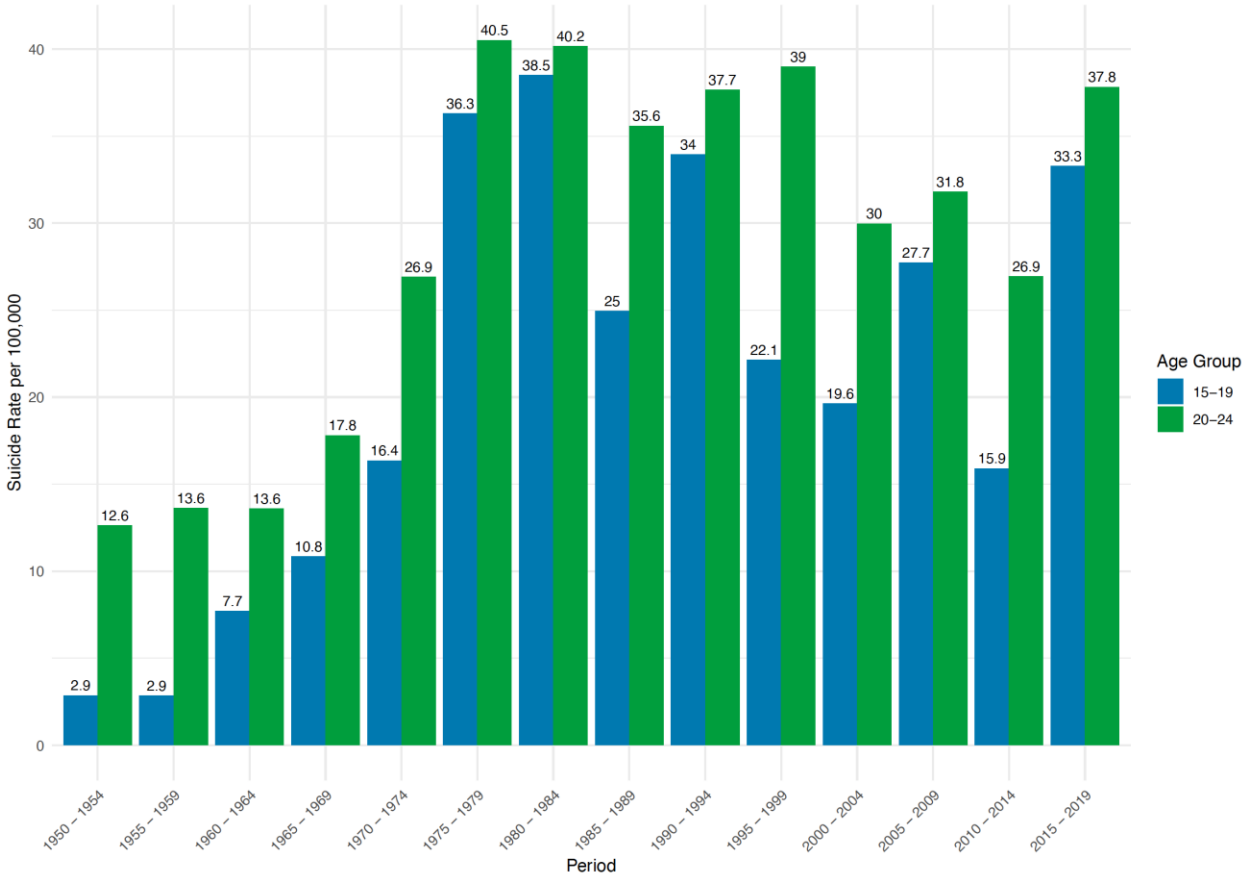

Figure 7: Suicide rates per 100,000 for 15-19 and 20-24 age categories for males in Saskatchewan, by period, 1950-2019.

Females also post high rates for youth around the same periods as their male counterparts in the 1970s and 1980s. But, and strikingly, the rates seen during this period are not the highest rates

recorded. To add, the parabolic shape seen for males is not mirrored in the rates for females aged 15- to 24-years-old. The accumulation in rates between the 1960s and early 2000s for males is instead left-skewed for females. Also, rates for 15-19 are near parity and in many cases surpass that of the 20-24 age group, present mostly in the 1995-1999 period and persisting into the 2000s. This last part is also in stark contrast to male rates, as the 20-24 category is the most suicidal for males.

BC and ON females follow a pattern more akin to their male counterparts with peaks in the 1970s. That said, rates fall to values higher than pre-emergence of youth suicide and plateau with a slight increase in the 2000s. Female ON rates for 20- to 24-year-olds also replicate patterns seen for males. The 20-24 group peaks in 1975-1979 at 7.0 but is nearly matched in 2015-2019 at 5.7, something unseen for ON males where rates plateaued. The 15- 19-year-olds differ from the male counterpart and see a linear increase in rates from 1.3 in 1950-1954 up to 6.1 in 2015-2019 and importantly, surpassing the rate for 20- to-24-year-olds.

Female QC rates see a similar rise as their male equivalent, but they peak a bit later in 1995-1999 and 2000-2004. The peak for female suicide in QC is also marked by the highest rates being in the 15-19 age category for both periods mentioned. On top of that, rates for 20-24 females do not change between 1970-1974 at 4.9 and 5.6 in 2015-2019, whereas they fell for males between the same periods. The return of higher rates for females in QC is only seen for 20- to 24-year-olds unlike that of BC and ON, as rates for QC 15- to 19-year-olds drop to 3.3 in 2015-2019. No less, rates for 15-19 are still 6.6 times higher in 2015-2019 than their low in 1955-1959 at 0.5. Once more, indicating a new regime of youth suicide.

Trends for female suicide in SK and MB, AB, and the Atlantic provinces are very different from BC, ON, and QC, and from their male analogues. Firstly, Atlantic Canada and SKMB see

their rates increase as of 1970-1974 and subsequently stabilize at higher rates. Thereafter, rates rise sharply as of 2000-2004 for SKMB as seen in Figure 7, and as of 2010-2014 for the Atlantic provinces, featuring higher rates for 15- to 19-year-olds. On the other hand, female AB suicide rates increase as of 1970-1974 and plateau into 2015-2019, with the highest rate recorded over the 1950-2019 period being 10.5 for 20- to 24-year-olds in 2015-2019. Meaning, that youth rates are the highest they have ever been, even with their emergence beginning at the same time as males.

Secondly, rates for 15- to 19-year-old females in SKMB begin surpassing those for 20- to 24-year-olds as of 1990-1994, peaking in the final three periods of 2005-2009 to 2015-2019 at 16.2, 18.1, and 18.5, respectively. These are the highest rates recorded for females during the entirety of the study period, for all provinces within these age groups. A similar pattern between age groups is seen for Alberta, albeit not for all periods after 1990-1994 and not to the same magnitude of rates. The Atlantic provinces also have periods with higher rates for 15- to 19-year-olds between 2005 and 2014. In sum, the increases seen between 2004 and 2019 are synonymous with all provinces for females and in sharp contrast with male patterns.

The rates for males and females aged 15- to 24-years-old never returned to their pre-increase levels. For males, the rates peaked and then leveled out and fell to lower levels when compared to their *peak,* barring some provinces. For females, the rates either increased as of the 1960s and 1970s and plateaued at higher rates or increased thereafter. This is crucial, as it implies three important aspects. (1) The increase in rates for male and female youth aged 15 to 24 was a novel event that persisted across all provinces. (2) This pattern was simultaneous across provinces and sex, implying nation-wide social structural changes that impacted the fundamentals of day-to-day existence and social relations for youth. (3) The high rates of suicide seen for youth are not ‘normal’, rates were far lower or nearly non-existent prior to the 1960s. Most of all, the resurgence

of rates as of the twenty-first century are happening in tandem across provinces, regardless of prevailing prevention methods.

5.1.3 Sex-ratios by Age and Period Group

Sex-ratios allow for the comparison between male and female suicide rates. As mentioned, the global average across the whole study period and all the provinces is 3.71:1, male to female. The global average, in-line with comparable Western countries, oversimplifies the sex-ratio. Table 4 and Table 5 show that the sex-ratios vary tremendously by age group, period, and province. Further, that there are discernible trends that echo the emergence of youth suicide and the subsequent increase in female suicide for youth as of the 1990s. These tables will be followed by a more minute analysis of sex-ratios for 15- to 24-year-olds, looking at the crude sex-ratios by age and period.

Excluding the 65-84 category, some of the highest sex-ratios are in the 15 to 29 range, as seen in Table 4. Average sex-ratios among youth and young adults are higher than the global average across the provinces, indicating that these age groups were deadlier for males. Secondly, the periods with the highest sex-ratios are between 1980 and 2004 (Table 5), though this elides the differences between age groups within this period. A spike in the sex-ratio is recorded for these periods and age groups when the sex-ratios are stratified by age group, period, and province. Thereafter, the sex-ratios generally decrease for the 15-24 range, well below the global average. Lastly, there are significant differences between each province, with some having related trends. Three groups can be discerned as QC, ON, BC, and Atlantic Canada; SK and MB; and Alberta straddling the two groups.

All things considered, the sex-ratios in Table 4 below clearly illustrate the emergence of youth suicide as borne through rapid increase in male suicide. The dominance of male suicide in

the age groups of 15 to 29 is present for QC, ON, BC, AB, and Atlantic Canada (up to the age of 34 for BC and AB). The sex-ratios for these age categories are all above their respective averages. The sex-ratios for the 15 to 24 age categories are also the highest among all age groups, excluding the 65-84 group. Further, this is especially obvious among 20- to 24-year-olds. To emphasise the point, there is no other age group other than 15 to 29 that stray far beyond their respective provincial averages. These periods were marked by excessive male suicides that increased far beyond any increase seen for females.

Age	Québec	Ontario	British Columbia	Manitoba	Saskat-chewan	Alberta	Atlantic	Avg./Age
15-19	4.36	3.39	3.63	2.96	3.50	3.96	5.39	3.88
20-24	4.41	3.68	4.51	4.54	4.81	4.57	6.37	4.70
25-29	3.64	3.14	3.68	3.10	3.26	3.63	5.61	3.72
30-34	3.31	3.04	3.44	3.51	3.55	3.80	4.61	3.61
35-39	2.99	2.89	3.08	3.08	3.30	2.78	4.74	3.27
40-44	2.82	2.93	3.00	4.05	4.44	2.65	5.01	3.56
45-49	2.67	2.56	2.80	3.62	3.74	3.05	4.34	3.26
50-54	2.76	2.62	2.66	3.40	3.14	3.33	4.04	3.14
55-59	3.10	2.83	3.03	4.49	4.32	3.21	4.74	3.67
60-64	3.39	3.02	3.05	3.73	3.99	3.78	4.65	3.66
65-84	4.80	3.72	3.70	5.16	5.09	4.13	7.59	4.89
Avg./ Province	3.48	3.08	3.33	3.79	3.92	3.54	5.19	

Table 4: Average sex-ratios by age category and province, male to female, 1950-2019.
Notes: the sex-ratio for SK and MB are calculated by dividing the respective male suicide rates by the combined SK and MB female suicide rates (ex: SK sex-ratio = male SK suicide rates / female SKMB suicide rates).

The sex-ratios for the 40-64 categories reveal that female suicide tended towards middle-aged adults, as seen with the rates above. The middle-age adult sex-ratios are far below provincial averages, suggesting that the mass of female suicide is located within the 40 to 64 range. Further, these age groups are sometimes, albeit rarely, somewhat close to parity. Even then, the sex-ratios are far below the global average and show how the global average can obscure the variations in sex- and age-specific suicide trends.

The sex-ratios for Atlantic Canada are a lot higher than any other province, though they match the trends of QC, ON, AB, and BC. The reasons are multi-faceted and are somewhat linked to the low rates of female suicide in the Atlantic provinces. Rates for females in Atlantic Canada are very low and often have a count less than 5, and this is especially so for the earlier periods of this study and for older age groups. Thus, the values for Atlantic Canada represent the over-mortality of males but are also a product of the smaller population size in relation to the rest of Canada.

The provinces of SK and MB flip the narrative on the former group. The sex-ratio for the 15-19 category is below average for both provinces, reflecting what is recorded in the rate statistics for female suicide in SK and MB. Also, the sex-ratio for 15- to 19-year-olds is lower than all other provinces, even though there is a greater preponderance of males committing suicide in SK and MB than other provinces. Further, the ratios for middle-aged adults are all below average with the exception of the 40-44 bracket.

The sex-ratios averaged by period and province indicate a rise in sex-ratios during the periods marking the birth of youth suicide. Although, the periods marking the rise in sex-ratios above their provincial average does not fully line up with all provinces. As was seen, ON and BC marked their peaks in youth suicide earlier than other provinces in the 1970s but sex-ratios for these periods are below average. Of course, this is an average of all age groups. But, what can be discerned is that the 1970s did not have an overabundance of male suicide that dominated the period-specific sex-ratio.

Period	Québec	Ontario	British Columbia	Manitoba	Saskat-chewan	Alberta	Atlantic	Avg./Period
1950-54	2.93	3.18	3.04	5.42	4.23	3.16	3.78	3.68
1955-59	3.46	3.44	3.82	3.56	3.90	4.46	4.91	3.94

1960-64	3.47	3.15	3.70	4.84	5.03	6.00	4.79	4.42
1965-69	3.07	2.70	2.61	4.25	3.56	4.10	5.55	3.69
1970-74	3.04	2.41	2.21	3.34	3.22	2.39	5.22	3.12
1975-79	2.96	2.61	2.61	3.25	3.27	1.39	5.27	3.05
1980-84	3.71	3.03	3.36	3.69	4.44	3.23	6.51	4.00
1980-89	3.95	3.18	4.08	3.94	3.94	4.25	5.86	4.17
1990-94	4.32	3.52	3.64	4.22	5.03	3.69	5.75	4.31
1995-99	3.92	3.59	4.29	4.17	4.88	4.27	5.87	4.43
2000-04	3.89	3.22	3.44	3.63	3.75	3.48	5.18	3.80
2005-09	3.59	3.15	3.31	2.93	2.96	3.02	5.69	3.52
2010-14	3.30	3.00	3.20	2.87	3.03	3.08	3.98	3.21
2015-19	3.08	2.88	3.26	3.13	3.74	3.10	3.90	3.30
Avg./ Province	3.48	3.08	3.33	3.80	3.93	3.54	5.16	

Table 5: Average sex-ratios by period and province, male to female, 1950-2019.
Notes: the sex-ratio for SK and MB are calculated by dividing the respective male suicide rates by the combined SK and MB female suicide rates (ex: SK sex-ratio = male SK suicide rates / female SKMB suicide rates).

The sex-ratios in the highlighted region of Table 4 pinpoint the periods with above-average male suicides compared to provincial means. As seen, the same grouping is present for QC, ON, BC, and Atlantic Canada when compared to SK, MB, and AB. The former group, excluding Atlantic Canada, have lower sex-ratios than MB and SK across the highlighted period. Further, QC, ON, BC, and Atlantic Canada have above-average sex-ratios persist into the 2005-2009 period, whereas SK, MB, and AB had all dropped below-average by 2000-2004. That said, the sex-ratio narrows by 2015-2019 across all provinces.

Generally, the average sex-ratios by age and period mirror the rate-specific results above. Moreover, stratifying the sex-ratio by province, age, and period uncovers latent traits distinct to each. QC, ON, BC, AB, and Atlantic Canada broadly follow similar trends, while SK and MB make up the remainder. Sex-ratio averages increase across the board during the peak youth suicide periods, indicating a strong increase in male suicide. Additionally, the ensuing periods show a decrease in the sex-ratio in tandem with the increases in female youth suicide. Lastly, the above-average mean sex-ratios for the 15-24 age categories followed by the increase in female youth

suicide in the twenty-first century further amplifies the severity of male suicide between the 1970s and 1990s. The nuances of 15- to 24-year-old sex-ratios will be covered in the following section.

5.1.4 Sex-ratios for 15- to-24-year-olds

Sex-ratios echo the rise of youth suicide rates across the provinces and emphasise the fulgurant increase in male suicide rates. Further, moving beyond average sex-ratios denotes the subtleties of youth suicide trends. Table 6 covers a selection of sex-ratios pre-, during, and post-inception of youth suicide. As observed, the sex-ratios generally rise during the periods of increased youth suicidality and subsequently inverse across all provinces. This trend is also illustrated in figures 43 through 49 found in the appendix. The figures clearly demonstrate that this tendency is present only for decedents aged 15 to 24. Lastly, there is the visual presence of cohort effects wherein youth with peak sex-ratios at the start of the 1980s persist with continued high sex-ratios as the cohort ages. The propensity towards male suicide continues with those who birth it.

Age	Period	Québec	Ontario	British Columbia	Manitoba	Saskatchewan	Alberta	Atlantic
15-19	1950-1954	4.00	3.88	2.87	0.00	0.00	0.00	0.00
15-19	1955-1959	5.00	2.88	4.76	2.05	1.85	0.00	0.00
15-19	1970-1974	3.87	3.95	2.25	3.44	3.10	2.72	8.71
15-19	1975-1979	4.75	3.55	3.87	4.76	5.91	1.37	5.08
15-19	1980-1984	7.44	5.43	4.58	5.72	8.77	5.26	5.10
15-19	1985-1989	5.79	4.91	6.33	3.70	3.97	6.73	15.16
15-19	1990-1994	5.20	3.43	2.73	4.28	3.59	3.10	5.64
15-19	1995-1999	3.70	3.61	3.78	3.41	3.28	3.93	4.13
15-19	2010-2014	2.81	2.71	1.94	0.99	0.88	2.61	2.26
15-19	2015-2019	2.88	1.62	2.66	1.20	1.80	2.48	1.70
20-24	1950-1954	2.11	2.30	1.74	6.42	3.90	3.82	2.03
20-24	1955-1959	3.09	4.00	6.35	3.93	7.82	3.85	3.85
20-24	1970-1974	4.84	4.26	3.50	4.95	4.23	3.27	6.14
20-24	1975-1979	4.61	3.97	4.25	4.17	4.58	1.70	6.84
20-24	1980-1984	6.06	4.36	4.68	6.26	6.36	5.64	10.79
20-24	1985-1989	6.61	4.10	5.67	5.47	5.38	6.49	9.04
20-24	1990-1994	7.32	4.60	4.51	5.50	4.41	4.86	7.98
20-24	1995-1999	5.97	5.02	4.46	7.03	6.76	9.18	5.82
20-24	2010-2014	3.30	3.11	2.29	1.14	2.00	3.99	3.52
20-24	2015-2019	2.76	2.57	2.45	1.95	2.17	2.51	3.26

Table 6: Sex-ratios for age groups 15-19 and 20-24, for periods before, during, and after the rise in youth suicide.
Notes: the sex-ratio for SK and MB are calculated by dividing the respective male suicide rates by the combined SK and MB female suicide rates (ex: SK sex-ratio = male SK suicide rates / female SKMB suicide rates).

Table 6 is evidence that the average sex-ratios do not provide a complete picture of sex-ratio trends. The average sex-ratio by age is skewed by the high sex-ratios recorded between 1970 and 1999. Table 6 shows that, among most provinces, youth ratios increased far beyond their average and subsequently fell to ratios considerably below average and near parity. As we see, sex-ratios for the 15 to 24 groups are almost all below 3 outside of 1970-1999.

Sex-ratios for the 15-19 category drop significantly in the more recent periods, more than the 20-24 age group. This difference is especially present across MB and SK. The sex-ratios for the 15 to 19 age group completely inverse the trend with a predominance of female suicide in 2010-2014 with a slight rebound for males in 2015-2019. These shifts are not represented in the average sex-ratios presented above and are completely lost in province-wide or nation-wide sex-ratios. This is important, as high-level aggregate values can sometimes obscure latent trends in populations and elide the study of certain groups.

The 1980-1989 period marks the peak for most provinces for sex-ratios even if suicide rates for males continued climbing into the 1990s, for some provinces. This is partly explained by the increase in female suicide rates as of and into the 1990s. These peaks are even present in ON and BC wherein suicide rates for males peaked in the 1970s and subsequently began diminishing.

This parabolic trend in sex-ratios with a peak between 1970 and 1989, with a subsequent drop is also visible in the 25-29 and 30-34 age groups. That said, the peaks come in later periods and at smaller levels as the cohorts age. This trend matches the male cohort effects detailed above, indicating that the predominance of male suicide within these cohorts is a trend that persists within these cohorts. QC's highest sex-ratio for 15- to 19-year-olds was in 1980-1984 at 7.44; at 20-24

the group has the second highest ratio at 6.61 in 1985-1989 (the highest ratio for the 20-24 age category was the period after, at 7.32); 25-29 had the highest ratio for the age group at 5.45 in 1990-1994; the trend continues with the following age group of 30-34, and generally follows for the subsequent periods. This trend is visible across provinces and indicates that cohorts with high rates of youth suicide maintained an overabundance of male suicide as it aged.

This last point is significant, as it suggests that the increase in youth suicide rates was not only characteristic of the 1965-1969 cohort, but also notably marked by male youth. This being said, we cannot lose focus of the simultaneous rise in female suicide that took place at the same time. Sex-ratios often draw attention to the group with higher rates, but as we observed, female suicide rates began to rise as male suicide rates declined around the turn of the century. This phenomenon is reflected in the sex-ratios when stratified by age and period. Sex-ratios drift towards parity after the 2000s for youth age groups across the provinces, something imperceivable in the global sex-ratio.

5.2 APC-I Model

It is generally difficult to ascribe mortality patterns to a single variable, be it age, period, or cohort. In almost all cases, mortality rates are multifactorial in cause. As discussed, APC models suffer from collinearity, and it is nigh impossible to ascertain independence among the variables. The APC-I model section will be separated into four subsections: estimated age main effects, estimated period main effects, estimated inter- and intra-cohort effects, and comparing predicted rates between AP and APC-I models, and age only and APC-I models. Although the results are presented individually, age, period, and cohort effects are not conceptually independent. Further, in terms of estimated causality, age, period, and cohort effects act simultaneously, to different degrees, and are estimates that represent proximate effects. It is within this framework that we can

interpret APC effects as measures of sociohistorical change by looking at major events that may have marked how youth conceptualise their future.

Age and period main effects represent the outcome of being in a group compared to the global mean. That means, a coefficient of -0.82 for 15- to 19-year-old females in BC reduces the risk of suicide by 55% ($e^{-0.82} - 1$) when compared to the global mean of that province.[304] As for cohort effects, the age-by-period interaction term is the deviation from age and period predicted suicide rates. Further, prime importance is placed on the effect size of the coefficients and not the p-values or standard errors (unless specified), as was explained in the methodology. Lastly, MB and SK were analysed independently for females, unlike their descriptive statistics.

Some of the APC effects could not be fully ascertained for males in MB, and for females in QC, AB, MB, SK, and the Atlantic provinces. Unfortunately, due to zero values present across these datasets found mostly in older age groups, the coefficients for the age and period main effects, and the inter- and intra-cohort effects were skewed. The values are still representative, but their interpretation is affected by the outlier zero values.

Three patterns are present in the APC-I model analysis: (1) age main effects for males and females indicate that the risk of suicide is effectively a Durkheimian curve, negative effects for youth groups and increasing with age, peaking in the middle age groups with a slight drop-off afterwards; (1.1) some minor exceptions are seen for female BC and MB youth. (2) The periods with large effect sizes reflect those mentioned in the descriptive statistics, in the periods characterised by the peaks of youth suicide. (2.1) Positive period coefficients for males are found across the provinces (with some variation) as of the 1960s and slowly fade into the 2000s; (2.2)

[304] The *e* refers to Euler's number (approximately equal to 2.718), which is used to exponentiate regression coefficients, transforming a log scale coefficient to the count scale. In this case, with sum-to-zero coding, the exponentiated coefficients refer to percent deviation from the global mean of a given province. The global mean is not interpreted as *global* across every province, but as specific to each province and sex.

the same beginnings are found for females, but positive coefficients increase into the 2000s (except for BC and ON). (2.3) Coefficients pre-1960 are generally large and negative for males and females, implying that rates as of the emergence of youth suicide are substantially higher. (3) Lastly, inter- and intra-cohort effects for females reveal some possible cohort effects for cohorts born after 1985 across all provinces. Male cohort effects find significance between 1960 and 1974 for QC, SK, and Atlantic Canada, with the other provinces having cohort effects that weaken significantly as they age.

5.2.1 Estimated Age Main Effects

The complete collection of figures and tables for estimated age and period main effects can be viewed in the Appendix Tables 32-49 and Tables 50-53 for the confidence intervals. Only a selection will be presented in the main body of this text as representative of certain patterns. For the figures on age and period main effects, a positive deviation from the x-axis indicates higher-than-average suicides while the latter indicates the opposite. Values closer to the x-axis indicate little deviation from the global mean. Lastly, these are 'average' estimated age and period effects, meaning that they are averaged over the whole period (1950-2019) for the former and all age groups (15-84) for the latter.

Age main effects for males reflect the results seen in the descriptive statistics. Male suicide for 15- to 19-year-olds was well below the global average of each respective province. For example, in Table 32 in the Appendix, the Atlantic provinces have a coefficient of -0.69 (95% C.I. = -0.78 to -0.60) or -50%, ON, in Table 7 below, a coefficient of -0.79 (-55%; 95% C.I. = -0.84 to -0.74), or QC at -0.70 (-50%; 95% C.I. = -0.76 to -0.64). SK and MB are the only provinces with coefficients closer to zero, yet still negative, with coefficients of -0.34 (95% C.I. = -0.45 to -0.23) and -0.27 (95% C.I. = -431.36 to 430.82), or -29% and -24%, respectively. The negative

coefficients representing lower-than-average suicide rates between 1950 and 2019 are indicative of the nearly non-existent suicide rates prior to the 1970s in comparison to the steady suicide rates among 40- to 64-year-olds. Though, the results for SK and MB put into greater perspective the amplitude of suicide for 15- to 19-year-olds in comparison to the other provinces. The suicide rates for the 15-19 age group were almost always overshadowed by the 20-24 category for every province.

	British Columbia			**Saskatchewan**			**Ontario**		
	Coefficient	S.E.	Sig.	Coefficient	S.E.	Sig.	Coefficient	S.E.	Sig.
Intercept	-8.31	0.01	***	-8.35	0.02	***	-8.54	0.01	***
15-19	-0.75	0.04	***	-0.34	0.06	***	-0.79	0.02	***
20-24	-0.16	0.03	***	0.11	0.04	**	-0.24	0.02	***
25-29	-0.12	0.03	***	-0.04	0.04		-0.22	0.02	***
30-34	-0.14	0.03	***	-0.05	0.05		-0.18	0.02	***
35-39	-0.09	0.03	***	0.00	0.04		-0.06	0.02	***
40-44	0.04	0.02		0.08	0.04		0.07	0.02	***
45-49	0.10	0.02	***	0.07	0.04		0.14	0.02	***
50-54	0.17	0.02	***	0.09	0.05	*	0.21	0.02	***
55-59	0.18	0.03	***	0.13	0.05	**	0.24	0.02	***
60-64	0.11	0.03	***	0.03	0.05		0.16	0.02	***
65-69	0.05	0.03		-0.07	0.06		0.11	0.02	***
70-74	0.06	0.03		-0.04	0.06		0.13	0.02	***
75-79	0.23	0.04	***	0.03	0.07		0.20	0.03	***
80-84	0.31	0.05	***	-0.01	0.09		0.24	0.04	***

Table 7: Male age main coefficients for select provinces.
*Notes: The other provinces can be viewed in the appendix Table 32. S.E. refers to standard error; Sig. refers to significance levels. p-value: * < 0.05, ** < 0.01, *** < 0.001.*
To not clutter the tables presented in-text, the confidence intervals will be presented only in the tables found in the Appendix.

Female estimated age coefficients for the 15-19 age category are relatively similar with some variations, as seen in Table 8 or Table 33. Age main coefficients are also negative for females aged 15- to 19-year-olds in the other provinces. BC has a coefficient of -0.82 (-56%; C.I. = -0.98 to -0.67), AB -0.56 (-43%; 95% C.I. = -431.65 to 430.53), QC -0.72 (51%; 95% C.I. = -431.81 to 430.38) and ON at -0.81 (56%; 95% C.I. = -0.90 to -0.72). Atlantic Canada is slightly more

negative at -1.4 (-75%; 95% C.I. = -15503.30 to 15500.51), but they also have zero values that greatly impacted the confidence interval. That said, the results reflect the 'true' distribution of suicide rates in Atlantic Canada even if it may obscure patterns in the data. All things considered, the 15 to 19 age group, across the entirety of the period, has fewer suicides than the global mean for males and females.

Province	**British Columbia**			**Saskatchewan**			**Ontario**		
	Coefficient	S.E.	Sig.	Coefficient	S.E.	Sig.	Coefficient	S.E.	Sig.
Intercept	-9.50	0.02	***	-10.95	1,757.75		-9.71	0.01	***
15-19	-0.82	0.08	***	-0.67	7,795.12		-0.81	0.05	***
20-24	-0.37	0.06	***	-0.57	7,795.12		-0.34	0.03	***
25-29	-0.22	0.05	***	1.26	1,757.75		-0.16	0.03	***
30-34	-0.10	0.05	*	1.27	1,757.75		-0.09	0.03	**
35-39	0.04	0.04		1.34	1,757.75		0.07	0.03	**
40-44	0.16	0.04	***	1.29	1,757.75		0.20	0.03	***
45-49	0.30	0.04	***	1.40	1,757.75		0.39	0.03	***
50-54	0.41	0.04	***	1.53	1,757.75		0.43	0.03	***
55-59	0.30	0.05	***	1.31	1,757.75		0.40	0.03	***
60-64	0.21	0.05	***	1.13	1,757.75		0.26	0.03	***
65-69	0.11	0.06		0.99	1,757.75		0.23	0.03	***
70-74	-0.01	0.06		-1.09	7,795.12		-0.05	0.04	
75-79	-0.04	0.08		-1.16	7,795.12		-0.13	0.05	*
80-84	0.02	0.10		-8.04	17,072.21		-0.40	0.08	***

Table 8: Female age main coefficients for select provinces.
Notes: The other provinces can be viewed in the appendix Table 33. S.E. refers to standard error; Sig. refers to p-value significance levels.
*p-value: * < 0.05, ** < 0.01, *** < 0.001*
To not clutter the tables presented in-text, the confidence intervals will be presented only in the tables found in the Appendix.

Females in MB are the only group to have a positive coefficient for the 15-19 age group. We can posit that the increase in female youth suicide may be better attributed to MB, in the merged dataset of SK and MB for the descriptive statistics. Though, caution must be advised, as the 15-19 and 20-24 age groups for MB and SK have zero values in older age groups which may have influenced their coefficients. That said, with the zero-values included, SK has a negative

coefficient (-0.67; 95% C.I. = -15590.90 to 15589.56) for 15- to 19-year-olds, with decedents in this age group being 49% less likely to be at-risk of suicide. Contrarily, females in MB were more likely to be at-risk of suicide, with a coefficient of 0.21 (23%; 95% C.I. = -1230.85 to 1231.27). The same trend is seen for 20- to 24-year-olds. MB has a coefficient of 0.33 (39%; 95% C.I. = -1230.73 to 1231.39) while SK has a coefficient of -0.57 (-43%; 95% C.I. = -15590.81 to 15589.66). Unfortunately, definitive conclusions cannot be drawn from this. Clearly, these age groups, as seen in the descriptive statistics, have higher rates of suicides.

Coefficients for 20-24 males solidify the emergence of youth suicide across the Canadian provinces. The coefficients are clustered around the global mean and are slightly negative except for MB and SK. Further, suicides for 20- to 24-year-olds far exceed the suicides of 15- to 19-year-olds, who have significantly larger negative coefficients. For example, coefficients for males in BC or QC are -0.16 (-15%; 95% C.I. = -0.21 to -0.10) and -0.11 (-10%; 95% C.I. = -0.15 to -0.06), respectively. Coefficients close to the global average are a significant finding because suicide rates for 15- to 24-year-olds were below average up to the 1970s, even non-existent. Effectively, coefficients close to the global mean demonstrate that the increase in suicide for 20- to 24-year-olds was significant enough to impact the lower-than-average suicide rates prior to the emergence of youth suicide.

Unlike the other provinces, male SK and MB had positive coefficients of 0.11 (12%; 95% C.I. = 0.03 to 0.19) and 0.19 (21%; 95% C.I. = -430.28 to 431.28), respectively. The importance is not that the positive coefficients differ significantly from zero or not, but the fact that they are positive implies that there were likely excess suicides in SK and MB for 20- to 24-year-olds compared to other provinces (while considering MB's CIs influenced by a zero value). In addition, the coefficient for SK is the second-highest coefficient for age main effects in that province,

indicating the risk associated with the 20-24 age group when compared to other age groups. This finding is also supported by the consistently high rates of suicides for 20-24 males in MB and SK in the descriptive statistics.

Likewise, coefficients for females aged 20 to 24 are less negative and closer to zero than the 15 to 19 age group. Nevertheless, the coefficients are more negative than their male counterparts, with some exceptions. BC and ON have matching trends with negative coefficient values of -0.37 (-31%; 95% C.I. = -0.49 to -0.25) and -0.34 (-29%; 95% C.I. = -0.41 to -0.28) which corresponds with the significant drop in youth suicide after their peak in the 1970s. As noted above, MB females had a positive coefficient, with a 39% higher risk of suicide in this age group. Not mentioned, was that Atlantic Canada had similar results for females. The 20 to 24 age group had a coefficient of 0.58 (44%; 95% C.I. = -3099.80 to 3100.96), indicating a notable deviation from the global mean. This being said, Atlantic Canada also suffers from zero values like MB or SK. Once more, we must stress that these are estimates and although they reflect the exact suicide trends for these data, this model can be influenced and inflated by zero values.

Age effects for females in QC and AB mimic their male counterparts. The risk of suicide for 20- to 24-year-olds females in QC and AB is essentially average, with age main coefficients of -0.09 (-9%; 95% C.I. = -431.19 to -431.00) and -0.08 (-8%; 95% C.I. = -431.19 to -431.00), respectively. The increase in rates seen for 20- to 24-year-olds in AB and QC in the early 2000s is reflected in these coefficients. Firstly, it indicates that the increase in rates was substantial in comparison to other age groups in order to impact the global average. Further, that the increase in rates for youth was not a single event, but a continued and persistent trend.

Above-average coefficients for middle-aged adults are characteristic across sex and every province. It is clear that the most suicidal groups are 45- to 64-year-olds for males, and

approximately 40 to 64 for females. The highest coefficients are found within this range for males and females across all provinces (excluding older age groups). This pattern is visible in figure 8, charting the age main coefficients for females in ON. It is within these age groups that coefficients clearly diverge from the global mean with positive values. We can ascertain with relative confidence that the individuals within these age groups were more at-risk than others. Further, these age groups consistently have some of the highest rates even during the emergence of youth suicide. This is especially the case for females, who have larger coefficients than males for the same age groups.

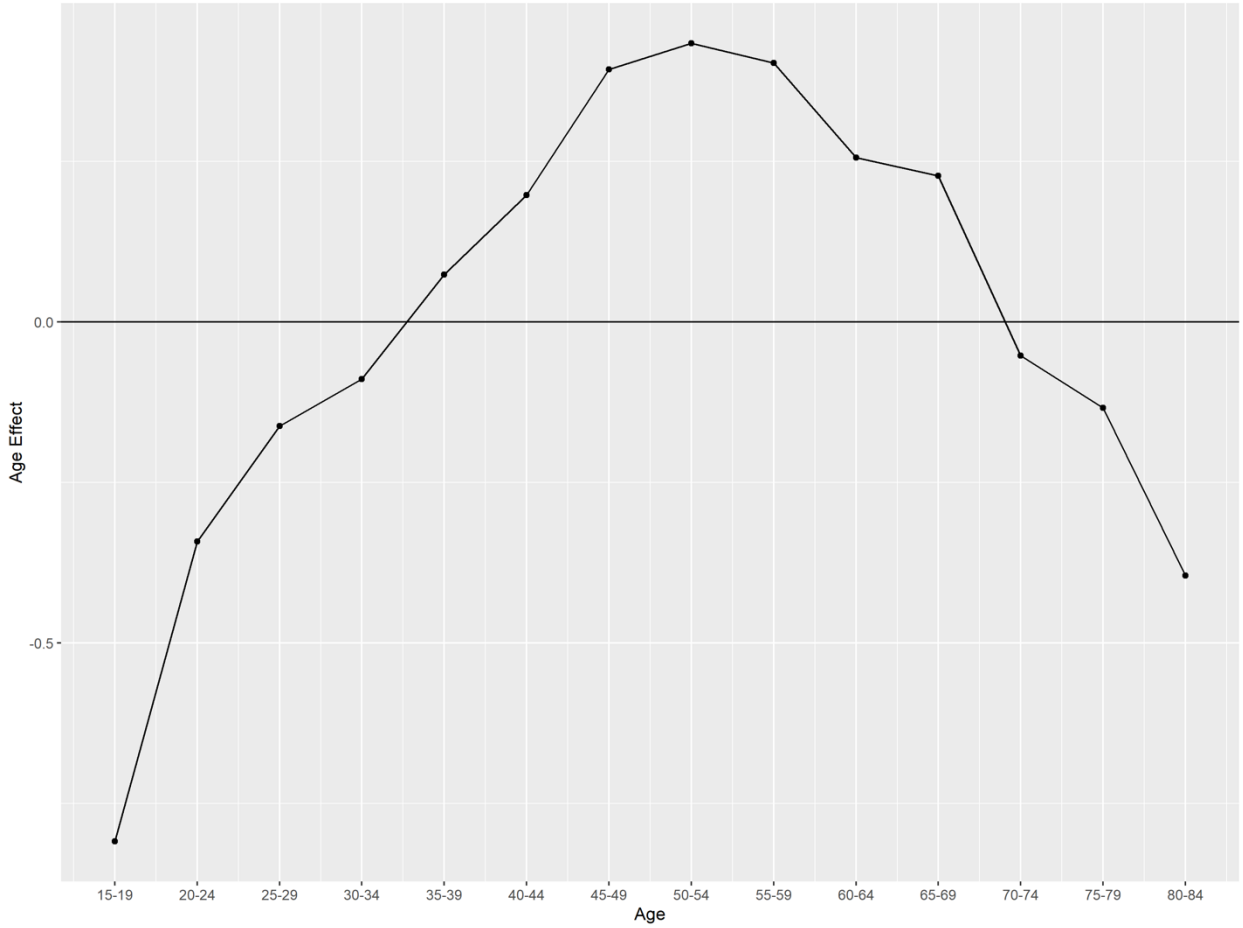

Figure 8: Estimated age main coefficients on female suicide rates for the province of Ontario, controlling for period and cohort effects.
Notes: The horizontal line indicates zero deviation from the global mean.

Female suicide rates in all provinces consistently display a characteristic peak in the middle-age adult groups across all periods. Of course, there are a few exceptions to the rule as discussed, and the same is seen for the coefficients. QC and AB see positive coefficients with sufficiently high estimated effect sizes in the 35-39 age category, which is not present in BC and ON. SK, MB, and the Atlantic provinces also have positive coefficients for the same age group as QC and AB; however, zero values in older age groups make the interpretation of the coefficients challenging.

The same pattern is witnessed in the estimated age main effects for males. That said, some exceptions must be noted. As seen in Figure 9, coefficients peak at 55-59 for Ontario at 0.24 (27%; 95% C.I. = 0.20 to 0.27), decrease slightly and then return to force at 80-84. Nevertheless, age main coefficients still increase with age and peak in mid-adulthood. A similar trend is observed in AB and BC, with every other province having the typical ‘parabolic’ curve.

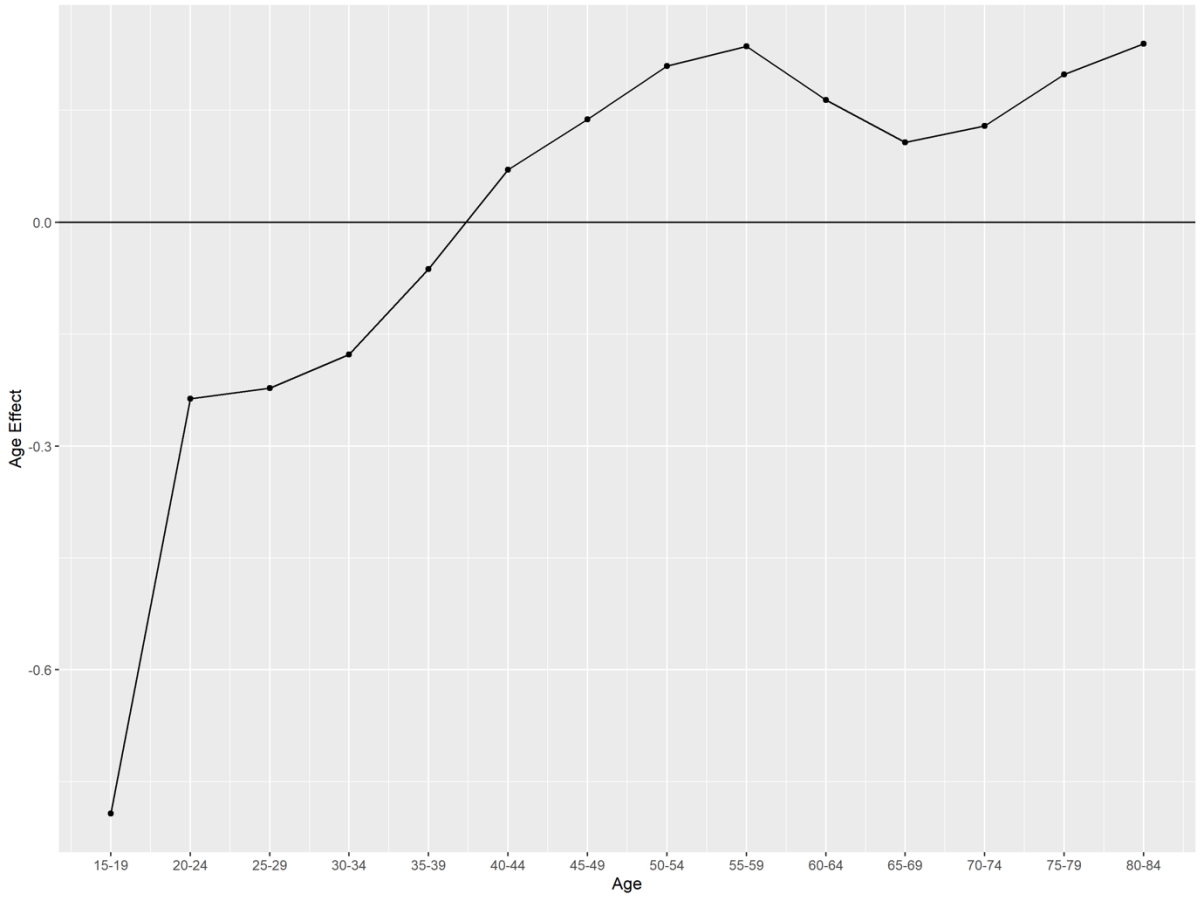

Figure 9: Estimated age main coefficients on male suicide rates for the province of Ontario, controlling for period and cohort effects.
Notes: The horizontal line indicates zero deviation from the global mean.

This curve drives multiple conclusions. Firstly, although we notice a rapid rise in suicide rates for 15- to 24-year-olds, their overall effect over the entirety of the period is not enough to produce positive coefficients across all provinces, averaged over the whole period. Nevertheless, we cannot ignore that rates for 15- to 24-year-olds – and especially for 15- to 19-year-olds – were extremely low between 1950 and 1969, and near zero for females. This, of course, had a major impact on the coefficient values for males and females across all provinces. Thus, that many provinces have negative coefficients near zero or positive coefficients for 20- to 24-year-olds is incredibly telling.

The age main effects might seem contradictory at first glance because they indicate that being 15-24 years old was not a risk factor for suicide across the provinces. Also, that being 15-19 years old is actually a 'protective' factor for suicide risk. Thibodeau also has similar coefficients for 15-19- and 20-24-year-olds.[305] The APC-I model and APC models in general are unable to determine age effects at specific period intervals because they calculate age effects over the entirety of the time period. In this case, age effects are measured for the whole 70-year period. The fact that the 20-24 age group had near zero coefficients is, if anything, testament that this age group had a large enough surplus of suicides during the emergence of youth suicide to offset their previously very low rates.

We can safely argue that there were age effects for males and females across all provinces for middle-aged adults, concurring with the descriptive statistics. Suicide rates maintained their high rate for the middle-age groups throughout the emergence of youth. The typical bump in the middle-ages may have lost its eponymous marker with high rates among youth, but rates were maintained for middle-age decedents, and this is evidenced in the estimated age main coefficients and the figures. Estimated age main effects all generally find their peak between the ages of 40 and 64. This pattern is found across males and females, and every province. Moreover, this is especially true for female age-suicide trends. Although we are seeing a resurgence in suicide rates for female youth across most provinces, middle-age groups maintain their suicide rates.

5.2.2 Estimated Period Main Effects

The results for the estimated period main effects represent the emergence of a new suicide mortality regime due to the historic influx of youth suicide. If it were not for an increase in youth suicide, period effects would not exist, regardless of the increase seen in other age groups. Echoing

[305] Thibodeau, "Suicide Mortality in Canada and Quebec, 1926-2008: An Age-Period-Cohort Analysis", 9.

the descriptive statistics, coefficients for males and females prior to the 1960s are negative across all provinces, except for BC males. As of the 1965-1969 period, coefficients meet and then exceed the global mean during the periods marked by the emergence of youth suicide. Importantly, this is a multi-period phenomenon and not a singular event; large positive coefficients persisted for decades. Following, most provinces (BC, AB, ON, QC, SK, MB, experienced a decrease at the turn of the century, while others marked a resurgence. The resurgence was most seen in as an attribute of female suicide, but it is also present among certain provinces for males. Nonetheless, we can argue that the positive estimated period coefficients align with the emergence of youth suicide. Practically, this means that there were estimated period effects for almost all provinces, male and female, as of the 1965-1969 period and up to 2015-2019 for females in some provinces. In addition, the period effects can be interpreted as greater for females than for males, seeing that the coefficients are generally larger for females when compared by province and therefore, countering the idea that the increase in female suicide was weaker than their male counterpart.

Period coefficients prior to 1965-1969 were negative or close enough to the global mean to not associate any sort of positive risk towards suicide. BC, ON, and MB are the first coefficients for males to have relatively large positive period coefficients, in 1965-1969. Prior, the 1950-1954 period for ON males was -0.09 (-9%; 95% C.I. = -0.15 to -0.03) whereas the 1965-1969 period had a coefficient of 0.15 (16%; 95% C.I. = 0.10 to 0.19) and the period after, 0.28 (32%; 95% C.I. = 0.23 to 0.32) in 1970-1974. Clearly, these periods are symptomatic of social forces influencing suicide rates for all age groups. In addition, they line up with the descriptive statistics. This trend can be seen in Table 9 below, as well as in Figure 10 illustrating estimated period main effects for ON males. The other provinces followed suite, SK had a coefficient of 0.20 (22%; 95% C.I. = 0.10 to 0.31) in 1975-1979; whereas QC (0.38 or 46%; 95% C.I. = 0.33 to 0.42), AB (0.32 or 38%; 95%

C.I. = 0.25 to 0.39), and Atlantic Canada (0.24 or 27%; 95% C.I. = 0.16 to 0.32) first significantly deviated from zero in 1980-1984.

Province	**British Columbia**			**Saskatchewan**			**Ontario**		
	Coefficient	S.E.	Sig.	Coefficient	S.E.	Sig.	Coefficient	S.E.	Sig.
Intercept	-8.31	0.01	***	-8.35	0.02	***	-8.54	0.01	***
1950-1954	0.22	0.04	***	-0.37	0.07	***	-0.09	0.03	**
1955-1959	0.03	0.04		-0.16	0.06	**	-0.02	0.03	
1960-1964	0.06	0.04		-0.06	0.06		0.01	0.02	
1965-1969	0.22	0.03	***	-0.18	0.06	**	0.15	0.02	***
1970-1974	0.25	0.03	***	0.10	0.06		0.28	0.02	***
1975-1979	0.23	0.03	***	0.20	0.05	***	0.30	0.02	***
1980-1984	0.12	0.03	***	0.32	0.05	***	0.25	0.02	***
1985-1989	0.02	0.03		0.13	0.05	**	0.15	0.02	***
1990-1994	-0.02	0.03		0.15	0.05	**	-0.02	0.02	
1995-1999	-0.14	0.03	***	0.05	0.05		-0.10	0.02	***
2000-2004	-0.20	0.03	***	-0.17	0.06	**	-0.28	0.02	***
2005-2009	-0.27	0.03	***	-0.08	0.05		-0.25	0.02	***
2010-2014	-0.20	0.02	***	-0.10	0.05	*	-0.19	0.02	***
2015-2019	-0.34	0.02	***	0.17	0.04	***	-0.19	0.02	***

Table 9: Male period main coefficients for select provinces.
Notes: The other provinces can be viewed in the annex. S.E. refers to standard error; Sig. refers to significance levels.
*p-value: * < 0.05, ** < 0.01, *** < 0.001*
The highlighted sections represent the periods with possible period effects.
To not clutter the tables presented in-text, the confidence intervals will be presented only in the tables found in the Appendix.

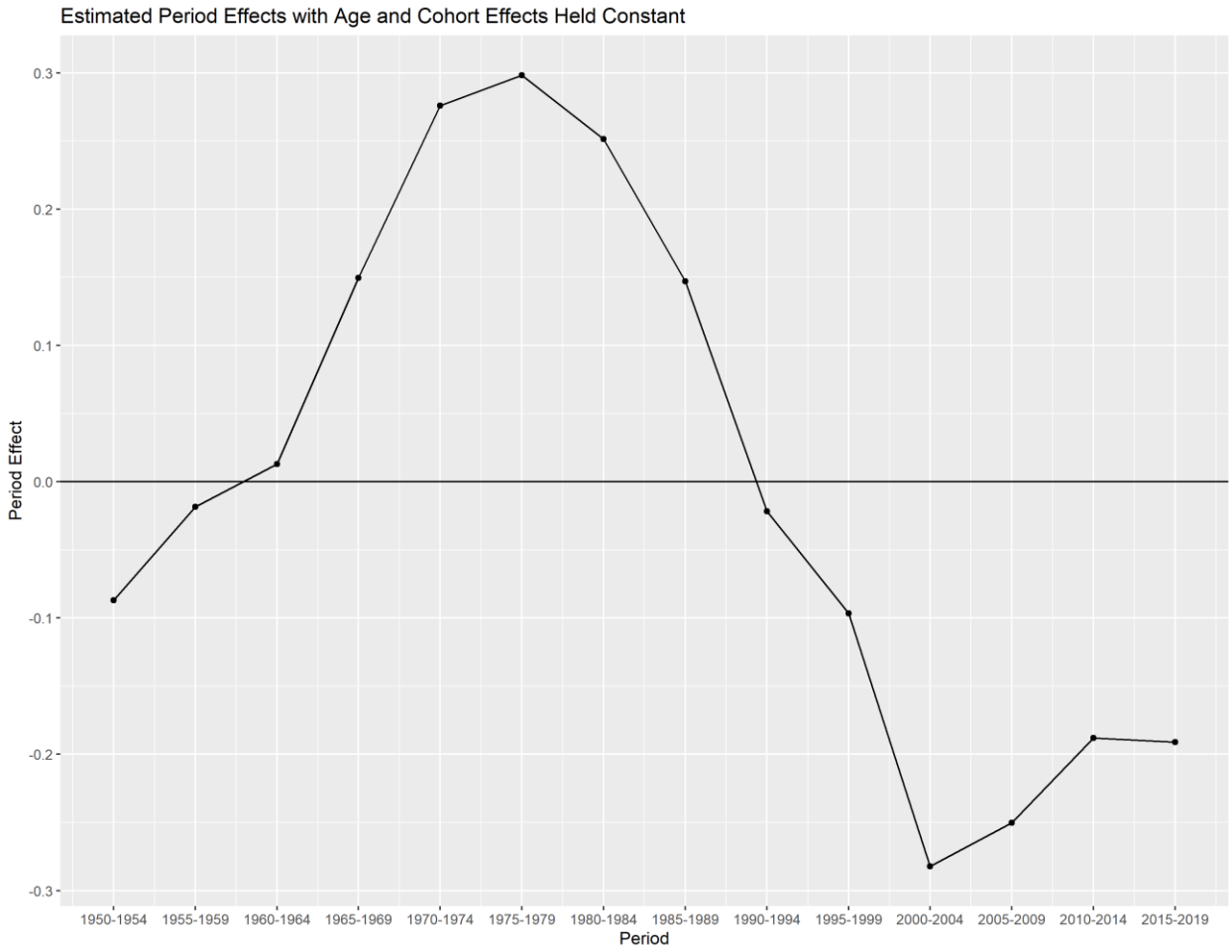

Figure 10: Estimated period main coefficients on male suicide rates for the province of Ontario, controlling for age and cohort effects.
Notes: The horizontal line indicates zero deviation from the global mean.

Females followed relatively the same pattern in the provinces where coefficients were interpretable. Importantly, the coefficients for females were generally far larger than their male counterpart. ON females saw a positive coefficient of 0.21 (23%; 95% C.I. = 0.12 to 0.30) in the same 1965-1969 period as males. Furthermore, as seen in Table 10, the 1970-1974 period for females in ON had a coefficient of 0.55 (73%; 95% C.I. = 0.49 to 0.62) compared to the 0.28 (32%) mentioned above for males. BC, AB, and MB also have larger coefficients for females than males, with QC matching the effect size. The larger effect sizes for females implies the gravity of the shift in comparison to males between pre- and post-emergence of youth suicide and in comparison to the zero values among periods of 1950-1959 for these three provinces.

Province	**British Columbia**			**Saskatchewan**			**Ontario**		
	Coefficient	S.E.	Sig.	Coefficient	S.E.	Sig.	Coefficient	S.E.	Sig.
Intercept	-9.50	0.02	***	-10.95	1,757.75		-9.71	0.01	***
1950-1954	0.20	0.09	*	-2.62	10,882.92		-0.16	0.07	*
1955-1959	-0.15	0.09		-0.62	7,795.12		-0.20	0.06	***
1960-1964	-0.05	0.08		-2.60	10,882.92		-0.06	0.05	
1965-1969	0.42	0.06	***	0.95	1,757.75		0.21	0.05	***
1970-1974	0.60	0.05	***	1.30	1,757.75		0.55	0.03	***
1975-1979	0.49	0.05	***	1.64	1,757.75		0.49	0.03	***
1980-1984	0.15	0.05	**	1.37	1,757.75		0.31	0.03	***
1985-1989	-0.06	0.05		-0.51	7,795.12		0.14	0.03	***
1990-1994	-0.15	0.05	**	-0.65	7,795.12		-0.13	0.03	***
1995-1999	-0.33	0.05	***	0.95	1,757.75		-0.25	0.03	***
2000-2004	-0.23	0.05	***	0.69	1,757.75		-0.34	0.03	***
2005-2009	-0.29	0.05	***	1.22	1,757.75		-0.26	0.03	***
2010-2014	-0.22	0.05	***	-0.65	7,795.12		-0.18	0.03	***
2015-2019	-0.37	0.05	***	-0.47	7,795.12		-0.13	0.03	***

Table 10: Female period main coefficients for select provinces.
Notes: The other provinces can be viewed in the annex. S.E. refers to standard error; Sig. refers to significance levels.
*p-value: * < 0.05, ** < 0.01, *** < 0.001*
The highlighted sections represent the periods with possible period effects.
To not clutter the tables presented in-text, the confidence intervals will be presented only in the tables found in the Appendix.

This could simultaneously mean many different things. Comparatively, female suicide marked a greater contrast between pre- and post-emergence of youth suicide. We can confirm this through the descriptive analysis. Every province witnessed female youth suicide rise from rates near 0 per 100,000 to rates above 5 per 100,000 and sometimes beyond 10 per 100,000. Further, rates for middle age groups among females also saw major increases. Although male youth suicide also increased at fulgurant rates, their increases were not at the same magnitude across all age groups. Increases in male suicide tended towards youth. The change in suicide rates across all age groups pre- and post-emergence of youth suicide seems to be far greater for females than for males.

Like their male counterpart, coefficients for females rose after their first positive occurrence. MB moves from a 0.65 (91%; 95% C.I. = -1230.41 to 1231.71) coefficient for 1970-1974, to 0.74

(109%; 95% C.I. = -1230.31 to 1231.80) for 1975-1979; these are huge percentage deviations from the global mean that exemplify the rapid increase in suicides among females in MB. QC had a similar surge in coefficients, from 0.20 (22%; 95% C.I. = -430.89 to 431.29) in 1970-1974 to a first peak in 1980-1984 of 0.49 (63%; 95% C.I. = -430.61 to 431.58), and a second peak at 0.53 (70%; 95% C.I. = -430.56 to 431.63) in 1995-1999, as seen in Figure 12. QC is the only province for females to have such an intense second peak, though not the only province to have a resurgence in positive coefficients. Among QC, a resurgence is seen in BC, MB, and AB, mirroring the descriptive statistics. In opposition, ON sees a serious negative withdrawal of coefficients as of 1990-1994 as seen in Figure 11, and it is impossible to determine the trajectory of coefficients for SK and Atlantic Canada.

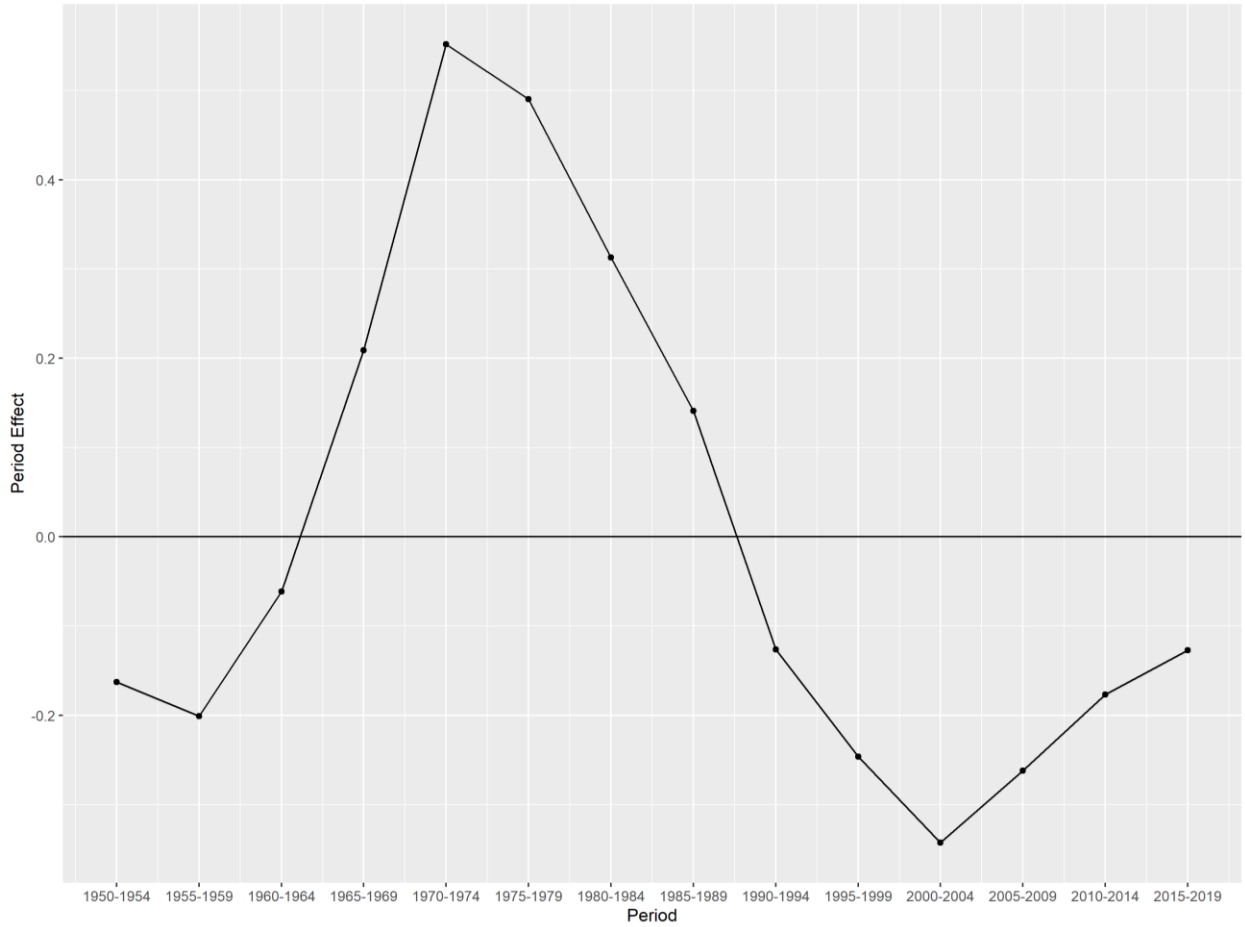

Figure 11: Estimated period main coefficients on female suicide rates for the province of Ontario, controlling for age and cohort effects.

Notes: The horizontal line indicates zero deviation from the global mean.

QC and Atlantic Canada are the only provinces for males that match the persistence of female suicide into the twenty-first century. Even then, the coefficients for QC males are trending downwards as of 2005-2009, with a drop from 0.35 (42%; 95% C.I. = 0.31 to 0.39) the period prior to 0.17 (19%; 95% C.I. = 0.13 to 0.21), and finishing negative in the final period of 2015-2019 at -0.07 (-7%; 95% C.I. = -0.11 to -0.04). Similarly, the coefficients for females in QC are also trending downwards, but they maintain some relative strength, ending at 0.16 (17%; 95% C.I. = -430.93 to 431.26) in 2015-2019. The trends for QC, for males and females can be viewed in Figure 12 and Figure 13 below. Males in Atlantic Canada have the opposite trend, with no negative coefficients after 1970-1974. Their coefficients increase up to 0.21 (23%; 95% C.I. = 0.13 to 0.28) into 2015-2019, with a small slump at the start of the 2000s. Other than QC and Atlantic Canada, MB and AB have flat coefficients in 2015-2019, at 0.06 (6%; 95% C.I. = -431.04 to 431.15) and 0.04 (4%; 95% C.I. = -0.02 to 0.09), respectively. In essence, although rates do decrease across age groups for all provinces except BC and ON, they do not fall back below the global mean. Meaning, suicide rates find a 'new, higher normal' across all age groups.

Figure 12: Estimated period main coefficients on male suicide rates for the province of Québec, controlling for age and cohort effects.
Notes: The horizontal line indicates zero deviation from the global mean.

The 'new normal' for females in most provinces has been characterized by rising suicide rates since the emergence of youth suicide. QC, AB, MB, and Atlantic Canada all have an obvious uptick in suicides. As seen in figure 13, QC female estimated period main coefficients quickly trend upwards and remain above the x-axis after 1970-1974. The same trend is seen for AB and MB (ignoring the zero-value skewed coefficient of 2010-2014). Essentially, solidifying the claim that the emergence of youth suicide fundamentally changed the regime of suicide across multiple provinces. There are minor exceptions with BC and ON. In the same manner as their male counterparts, BC and ON report a serious decrease in suicidality after the peaks in the 1970s. Possible reasons for the collapse of suicide rates will be discussed later.

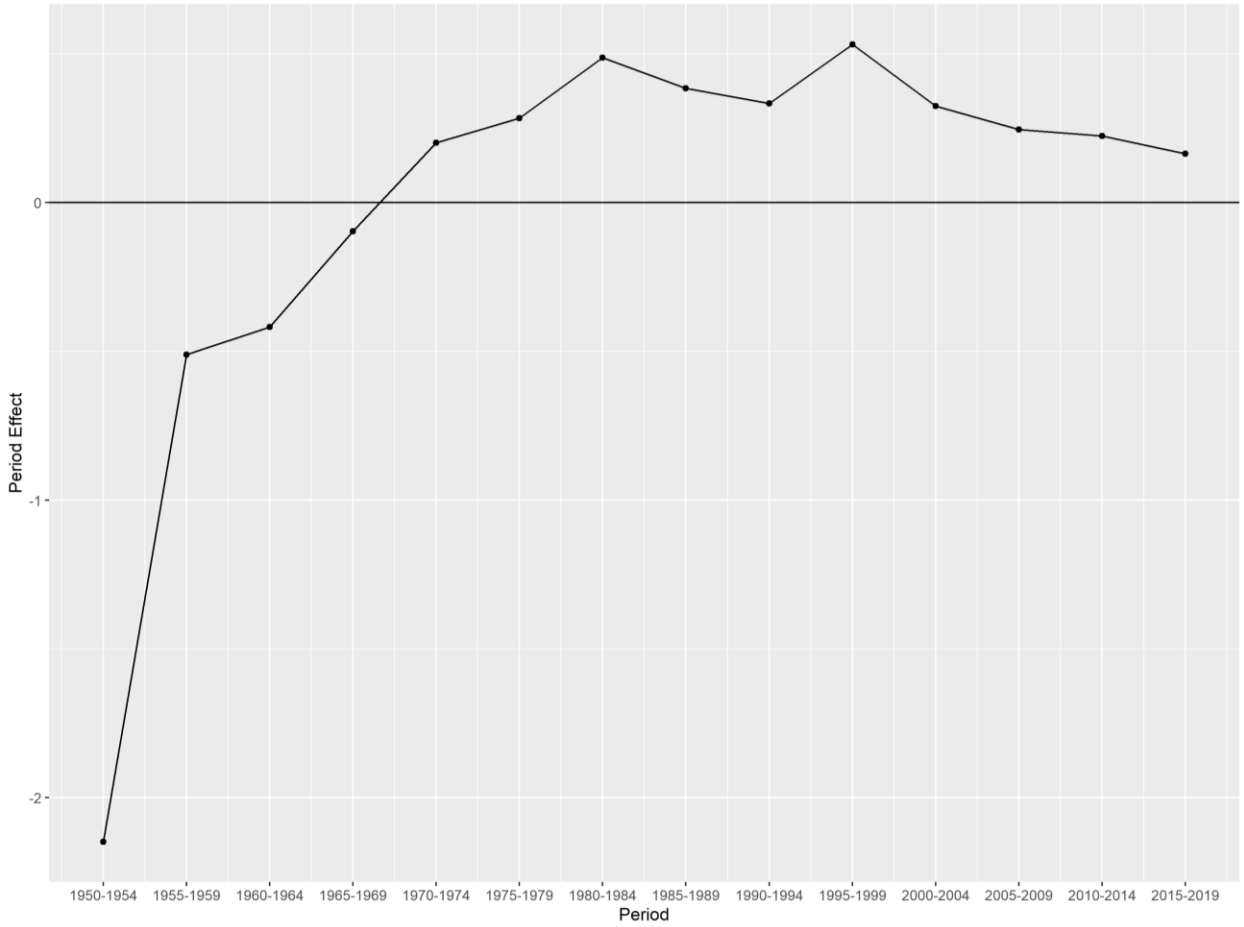

Figure 13: Estimated period main coefficients on female suicide rates for the province of Québec, controlling for age and cohort effects.
Notes: The horizontal line indicates zero deviation from the global mean.

Throughout the study period from 1950 to 2019, the periods with the highest youth suicide rates show the strongest positive period coefficients. This goes for males and females, across all provinces where coefficients are interpretable. Furthermore, coefficients do not return to the levels seen pre-emergence of youth suicide, except for BC and ON. Clearly, only social and structural changes can explain the simultaneous increase in suicide that began as of 1965-1969 and that has persisted to this day. Lastly, period effects measure the increase in rates across all age groups, meaning that suicide rates for non-youth must have increased in tandem with youth rates.

Consequentially, not only did youth experience major shifts between the 1960s and 1990s, but so did others. We can thus argue that there may have been some strong period effects across

all provinces in Canada, for males and females. These period effects were present at the emergence of youth suicide and are most likely interdependent with age effects. Further, the period effects were greater for females than for males and persisted longer for females. That is not to say that the same period effect was consistent from 1970 to 2019, but that a multitude of period effects (i.e. sociohistorical phenomenon), some most likely interrelated and continuous throughout the study period, were acting upon, perceived, and internalised by decedents.

5.2.3 Cohort Effects: Age-by-Period Interaction Terms

As explained in the methodology section, age-by-period interaction terms represent the deviations of a cohort with age and period main effects held constant. The interaction coefficients represent the differential effects of age and period effects on a cohort. More simply, they indicate the structural variance that is not explained only by the age and period main effects. Thus, when read on the diagonal, the interaction terms can be loosely interpreted as estimated cohort effects. For example, in Table 11 below, following the 0.26 coefficient in 1975-1979 for 15-19, to 0.27 in 1980-1984 for 20-24, to 0.20 in 1985-1989 for 25-29, and so on, along the diagonal. Meaning, a membership to a birth cohort may influence how social forces are internalised and acted upon, implying a possible cohort effect. The interaction terms will also be further analysed in the following section with inter-cohort deviation and intra-cohort slope.

	Period																									
	1950-1954		1955-1959		1960-1964		1965-1969		1970-1974		1975-1979		1980-1984		1985-1989		1990-1994		1995-1999		2000-2004		2005-2009		2010-2014		2015-2019	
Age Group	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
15-19	-0.89	***	-0.90	***	-0.84	***	-0.11		0.21	**	0.26	***	0.39	***	0.48	***	0.61	***	0.60	***	0.36	***	-0.02		-0.10		-0.05	
20-24	-0.71	***	-0.80	***	-0.38	***	0.08		0.26	***	0.47	***	0.27	***	0.26	***	0.39	***	0.29	***	0.18	***	0.00		-0.18	**	-0.14	*
25-29	-0.52	***	-0.20		-0.12		-0.02		0.08		0.22	***	0.21	***	0.20	***	0.18	***	0.17	***	0.08		-0.04		-0.14	*	-0.09	
30-34	-0.29	*	-0.20	*	-0.22	*	-0.12		-0.09		0.20	***	0.06		0.15	**	0.21	***	0.21	***	0.14	**	0.05		0.02		-0.11	
35-39	-0.36	**	-0.18		-0.08		0.02		0.03		-0.01		-0.12	*	0.07		0.10	*	0.17	***	0.17	***	0.17	***	0.14	**	-0.10	
40-44	-0.17		-0.05		-0.03		0.00		-0.10		-0.08		-0.07		-0.09		-0.06		0.11	**	0.12	**	0.27	***	0.16	**	0.00	
45-49	0.03		0.07		-0.07		0.05		-0.01		-0.15	*	-0.22	***	-0.21	***	-0.13	**	0.00		0.11	**	0.18	***	0.22	***	0.13	*
50-54	0.17		0.09		0.18		0.18	*	-0.03		-0.15	*	-0.20	***	-0.22	***	-0.21	***	-0.17	***	-0.02		0.05		0.11	*	0.23	***
55-59	0.09		0.31	**	0.17		0.20	*	-0.01		-0.13		-0.10		-0.11		-0.21	***	-0.25	***	-0.16	**	-0.03		0.12	*	0.12	*
60-64	0.53	***	0.61	***	0.47	***	-0.02		0.11		-0.12		-0.08		-0.25	***	-0.35	***	-0.33	***	-0.30	***	-0.15	*	-0.09		-0.01	
65-69	0.40	**	0.18		0.33	*	0.33	**	0.13		-0.08		-0.06		-0.11		-0.27	***	-0.25	***	-0.37	***	-0.16	*	-0.14	*	0.07	
70-74	0.47	**	0.19		0.26		0.05		-0.04		-0.04		-0.04		0.03		-0.13		-0.11		-0.17	*	-0.19	*	-0.12		-0.17	*
75-79	0.52	*	0.47	*	0.26		-0.42		-0.06		-0.18		-0.02		-0.11		-0.10		-0.12		0.02		-0.14		-0.08		-0.05	
80-84	0.73	**	0.41		0.09		-0.22		-0.49		-0.21		0.00		-0.08		-0.03		-0.31	*	-0.18		0.03		0.08		-0.18	

Table 11: Coefficient estimates of age-by-period interaction terms in the APC-I model for Québec males.
Notes: The other provinces can be viewed in the annex. Coef. refers to coefficients. Sig. refers to significance levels.
*p-value: * < 0.05, ** < 0.01, *** < 0.001*
The highlighted diagonals represent the cohorts with possible cohort effects.
The APC-I model is estimated with sum-to-zero coding, meaning that the main effects are interpreted as deviations from the global mean and the interaction terms as deviations from the main effects.

The suicide rate increases for youth as of the 1960s are not fully explained by age and period effects. As seen, estimated age main effects for decedents 15-24 are all negative with some minor exceptions. Estimated period effects may partly explain the increase in youth suicide, but period effects apply to all age groups and a lot of variance is left to the interaction terms, with most age groups beyond 50-54 being negative or near zero as of the 1960s, as seen in Table 11 and in the Appendix. Essentially, the emergence of youth suicide may be better explained through age-by-period interactions as possible estimated cohort effects.

15- to 24-year-olds often have the highest interaction coefficients in their respective periods, across males and females. For example, male age groups 15-19 and 20-24 in QC have the strongest positive interaction coefficients between 1970-1974 and 2000-2004. Females in QC, in Table 12, have the strongest positive interactions terms in the 15-19 category, with some in the 20-24 range, between 1985-1989 and 2015-2019. As it stands, we can make a preliminary conclusion that youth was a particularly turbulent period across males and females after the 1970s.

Among males, QC has the most obvious cohort effects and the most cohorts with possible cohort effects. Though, the other provinces for males also have noticeable cohort effects, as can be seen in the Appendix and discussed herein. In Table 11, weak cohort effects are highlighted in yellow and the cohorts with the strongest and most obvious cohort effects are highlighted in red. The strongest coefficients among the cohorts highlighted in red are for the 15-19 category that subsequently decrease over their lifetime. For example, 15- to 19-year-olds in 1980-1984 (1965-1969 cohort) have an interaction coefficient of 0.39, meaning that membership to this cohort increased suicide rates for 15-19 QC males by 48%. At the age of 20-24, this cohort had a coefficient of 0.26 (30%); at 25-29, 0.18 (20%), and so on and so forth. Further, although the

interaction terms are flattening out as the cohort ages, the cohorts maintain higher rates of suicide compared to other cohorts and do not come near zero.

Males also had cohort effects in other provinces with nearly the same cohorts, excluding MB. Positive coefficients for 15- to 19-year-olds began in either 1970-1974 or 1975-1979 and persisted up to the 1990s or 2000-2004. The 1980s period debuted the 'deadliest' cohorts among all provinces, being the 1965-1969 and 1970-1974 cohorts, with these cohorts having the steadiest positive coefficients across their diagonal. Once again, cementing the cross-province implications of suicide patterns. These suicides cannot be fully understood in isolation, they were and are the product of larger structural causes.

The primary results for females are positive interaction coefficients among 15 to 24-year-olds around the turn of the century and onward. Among provinces with interpretable interaction terms, QC, ON, BC, and AB, interaction coefficients are positive for those aged 15-24 as of the 1980s and 1990s. As seen in Table 12, there are few positive coefficients in female QC 15- to 19-year-olds and 20- to 24-year-olds. Unlike ON, in Table 13, there are no clear diagonal cohort effects in QC for any cohort within this time period.

	Period																							
	1950-1954		1955-1959		1960-1964		1965-1969		1970-1974		1975-1979		1980-1984		1985-1989		1990-1994		1995-1999		2000-2004		2005-2009		2010-2014		2015-2019	
Age Group	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
15-19	0.17		-1.30		-0.52		-0.72		0.02		-0.10		-0.33		0.17		0.46		0.70		0.78		0.37		0.15		0.15	
20-24	1.38		-0.59		-0.12		-0.10		-0.16		0.12		-0.20		-0.21		-0.11		-0.12		0.07		0.13		-0.10		0.03	*
25-29	1.46		-0.22		-0.21		0.12		0.15		0.24		-0.03		-0.12		-0.20		-0.18		-0.26		-0.37		-0.06		-0.31	
30-34	1.27		0.05		-0.14		0.19		-0.04		0.07		-0.06		0.05		0.00		-0.23		-0.24		-0.44		-0.17		-0.31	
35-39	1.17		0.10		-0.19		0.08		-0.09		0.06		-0.18		0.06		-0.08		-0.08		0.09		-0.22		-0.30		-0.41	
40-44	1.69		-0.42		-0.06		-0.19		-0.18		-0.20		-0.02		-0.07		0.01		0.04		-0.12		-0.05		-0.19		-0.26	
45-49	1.78		-0.01		-0.06		-0.28		-0.18		-0.35		-0.19		-0.05		-0.18		-0.08		0.02		-0.06		-0.07		-0.27	*
50-54	1.54		0.06		-0.04		0.11		-0.35		-0.14		-0.19		-0.28		-0.25		-0.30		-0.03		-0.06		-0.05		-0.03	***
55-59	1.36		0.16		-0.28		0.30		-0.26		0.02		-0.04		-0.38		-0.28		-0.29		-0.27		0.02		0.03		-0.08	*
60-64	2.30		0.23		-0.04		-0.21		-0.19		-0.19		-0.14		-0.28		-0.44		-0.35		-0.39		-0.23		-0.03		-0.03	
65-69	1.24		0.17		-0.42		0.02		0.33		-0.10		-0.18		-0.03		-0.38		-0.20		0.01		-0.27		-0.06		-0.15	
70-74	1.50		-0.06		0.03		-0.31		-0.04		0.13		0.13		-0.49		0.07		-0.12		-0.37		-0.07		-0.35		-0.07	*
75-79	2.34		-0.14		-0.03		-0.54		-0.72		-0.99		-0.09		0.34		-0.19		-0.03		-0.23		0.06		0.24		-0.02	
80-84	-19.22		1.98		2.08		1.53		1.72		1.46		1.52		1.28		1.57		1.23		0.94		1.19		0.97		-1.76	

Table 12: Coefficient estimates of age-by-period interaction terms in the APC-I model for Québec females.
Notes: The other provinces can be viewed in the annex. Coef. refers to coefficients. Sig. refers to significance levels.
*p-value: * < 0.05, ** < 0.01, *** < 0.001*
The highlighted diagonals represent the cohorts with possible cohort effects.
The APC-I model is estimated with sum-to-zero coding, meaning that the main effects are interpreted as deviations from the global mean and the interaction terms as deviations from the main effects.

ON, BC, AB are the only province for females with what can be perceived as possible cohort effects. Unfortunately, the cohorts of 1985-1989 and onward have few data points. Table 13 shows the female interaction terms for ON. Similarly to male patterns, females aged 15-19 in 2000-2004 have the highest coefficient at 0.50, meaning a 65% increase in suicide. Following, the coefficients decrease and subsequently stagnate. This can be interpreted as a possible cohort effect, but we unfortunately only have data up to the age of 30-34. Thus, this is an avenue that requires future research in the following decades. The subsequent cohort, 15- to 19-year-olds in 2005-2009 have a much stronger cohort effect, with coefficients greater than their predecessors. That said, we have even less data for this cohort. The same is said for AB and BC. In sum, there is evidence of possible future cohort effects for females in ON, BC, and AB, but more data is required. If we take into consideration the previous male cohorts beginning in the 1970s, we can argue that this is something that must be monitored and taken seriously.

	Period																							
	1950-1954		1955-1959		1960-1964		1965-1969		1970-1974		1975-1979		1980-1984		1985-1989		1990-1994		1995-1999		2000-2004		2005-2009		2010-2014		2015-2019	
Age Group	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
15-19	-0.43		-0.92	**	-0.44	*	-0.54	**	-0.40	**	-0.03		-0.24		-0.05		0.28	*	0.34	**	0.50	***	0.53	***	0.45	***	0.95	***
20-24	-0.12		-0.29		0.00		-0.12		-0.30	**	-0.01		-0.10		0.01		-0.02		-0.12		0.28	**	0.12		0.26	**	0.40	***
25-29	-0.03		-0.29		-0.03		-0.01		0.09		0.06		-0.12		-0.02		-0.17		-0.01		0.08		-0.07		0.20	*	0.32	***
30-34	-0.27		-0.13		0.29	**	0.14		0.14		-0.21	*	-0.22	*	0.03		-0.03		0.03		0.06		-0.02		0.04		0.14	
35-39	-0.19		-0.06		-0.02		0.14		0.11		-0.01		0.01		-0.11		0.15		0.17	*	0.01		-0.01		0.00		-0.18	*
40-44	-0.03		0.04		-0.18		0.25	**	0.19	*	0.06		0.09		-0.16		-0.08		0.09		-0.04		0.10		-0.09		-0.24	**
45-49	0.12		0.09		-0.03		0.25	**	0.11		0.04		-0.07		-0.03		-0.20	*	0.12		0.03		-0.07		-0.21	**	-0.15	
50-54	0.00		0.13		0.13		0.24	**	0.13		-0.02		-0.04		-0.12		-0.17		-0.23	*	-0.07		-0.06		0.05		0.04	
55-59	0.20		0.16		0.25	*	0.13		0.09		-0.04		0.04		-0.10		-0.25	*	-0.21		-0.08		-0.12		0.07		-0.13	
60-64	0.28		0.60	***	-0.07		0.28	*	0.09		0.05		0.09		-0.11		-0.16		-0.29	*	-0.21		-0.18		-0.17		-0.19	*
65-69	0.65	***	0.22		0.21		-0.02		-0.01		0.15		0.22	*	0.10		-0.16		-0.17		-0.14		-0.21		-0.52	***	-0.33	***
70-74	0.26		0.25		0.05		0.12		0.04		-0.11		0.06		0.10		0.05		-0.07		-0.13		-0.19		-0.15		-0.28	*
75-79	0.21		-0.12		-0.14		0.04		-0.32		-0.06		-0.04		0.32	*	0.33	*	0.24		-0.30		-0.08		-0.08		0.01	
80-84	-0.65		0.33		-0.02		-0.90	*	0.06		0.12		0.34		0.12		0.44	*	0.12		0.01		0.25		0.15		0.37	

Table 13: Coefficient estimates of age-by-period interaction terms in the APC-I model for Ontario females.
Notes: Coef. refers to coefficients. Sig. refers to significance levels.
*p-value: * < 0.05, ** < 0.01, *** < 0.001*
The highlighted diagonals represent the cohorts with possible cohort effects.
The APC-I model is estimated with sum-to-zero coding, meaning that the main effects are interpreted as deviations from the global mean and the interaction terms as deviations from the main effects.

Age-by-period interaction terms indicate that increases in youth suicide are tied to possible cohort effects for males. Relatively strong cohort effects are recorded for at least one cohort across all provinces for males, in the 1980s period for the 1965-1974 cohorts. For females, cohort effects are yet to be fully measured due to a current lack of data, but if they exist it would be for cohorts

beginning in the 1990s and 2000s (cohorts born as of 1985-1989). What is currently measured does indicate a need to follow these cohorts as they age, as the results indicate an over-mortality due to cohort membership.

These results imply that the unexplained variance from age and period main effects is of a nature specific to how these cohorts conceptualise their future place in society. The highest coefficients are found among 15- to 24-year-olds across both sexes and all provinces that can be interpreted. Therefore, entry into adulthood was fraught and continues to be so for females, it is unique to their position in the socio-historical timeline. More on this, in the discussion.

5.2.4 Inter-Cohort Deviation

Inter-cohort deviations are calculated by averaging the interaction terms across their diagonals. Then, z-tests are performed to examine if the average of the interaction terms are significantly different from zero. Thus, measures of significance are more important for inter-cohort deviations, unlike the regression coefficients. A significant positive score indicates that the cohort may have had higher suicide rates than the suicide rates expected by age and period main effects only. The reverse is true when the scores are negative and significant, and no cohort effects exist if the coefficient is small, closer to zero, and insignificant.

The inter-cohort deviations will be briefly covered below but their true interpretation requires the intra-cohort slopes in the following section. For example, a cohort can have a higher-than-average risk compared to other cohorts (inter-cohort deviation), but its life-course dynamic (intra-cohort slope) can indicate that the effect declined as the cohort aged – meaning, no cohort effect.

Inter-cohort deviations are mostly mirrored across the provinces that are interpretable, the only major difference being sex. A visual representation of cohorts can be viewed in Table 14,

below. At its most general, inter-cohort deviations for males are positive for the earliest cohorts beginning in 1870-1874 up to 1910-1914. Deviations are negative as of the 1915-1919 cohort and persists up to the 1945-1949 cohort. For context, the first cohort that begins with 15- to 19-year-olds is in the 1950-1954 period. Inter-cohort deviations begin to increase as of the 1950-1954 cohort and tend to peak with the 1960-1964 and 1965-1969 cohorts. Afterwards, male cohorts generally decline into the more recent cohorts, with some exceptions among ON, AB, SK, and the Atlantic provinces.

	Period													
Age Group	**1950-1954**	**1955-1959**	**1960-1964**	**1965-1969**	**1970-1974**	**1975-1979**	**1980-1984**	**1985-1989**	**1990-1994**	**1995-1999**	**2000-2004**	**2005-2009**	**2010-2014**	**2015-2019**
15-19	1935-1939	1940-1944	1945-1949	1950-1954	1955-1959	1960-1964	1965-1969	1970-1974	1975-1979	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004
20-24	1930-1934	1935-1939	1940-1944	1945-1949	1950-1954	1955-1959	1960-1964	1965-1969	1970-1974	1975-1979	1980-1984	1985-1989	1990-1994	1995-1999
25-29	1925-1929	1930-1934	1935-1939	1940-1944	1945-1949	1950-1954	1955-1959	1960-1964	1965-1969	1970-1974	1975-1979	1980-1984	1985-1989	1990-1994
30-34	1920-1924	1925-1929	1930-1934	1935-1939	1940-1944	1945-1949	1950-1954	1955-1959	1960-1964	1965-1969	1970-1974	1975-1979	1980-1984	1985-1989
35-39	1915-1919	1920-1924	1925-1929	1930-1934	1935-1939	1940-1944	1945-1949	1950-1954	1955-1959	1960-1964	1965-1969	1970-1974	1975-1979	1980-1984
40-44	1910-1914	1915-1919	1920-1924	1925-1929	1930-1934	1935-1939	1940-1944	1945-1949	1950-1954	1955-1959	1960-1964	1965-1969	1970-1974	1975-1979
45-49	1905-1909	1910-1914	1915-1919	1920-1924	1925-1929	1930-1934	1935-1939	1940-1944	1945-1949	1950-1954	1955-1959	1960-1964	1965-1969	1970-1974
50-54	1900-1904	1905-1909	1910-1914	1915-1919	1920-1924	1925-1929	1930-1934	1935-1939	1940-1944	1945-1949	1950-1954	1955-1959	1960-1964	1965-1969
55-59	1895-1899	1900-1904	1905-1909	1910-1914	1915-1919	1920-1924	1925-1929	1930-1934	1935-1939	1940-1944	1945-1949	1950-1954	1955-1959	1960-1964
60-64	1890-1894	1895-1899	1900-1904	1905-1909	1910-1914	1915-1919	1920-1924	1925-1929	1930-1934	1935-1939	1940-1944	1945-1949	1950-1954	1955-1959
65-69	1885-1889	1890-1894	1895-1899	1900-1904	1905-1909	1910-1914	1915-1919	1920-1924	1925-1929	1930-1934	1935-1939	1940-1944	1945-1949	1950-1954
70-74	1880-1884	1885-1889	1890-1894	1895-1899	1900-1904	1905-1909	1910-1914	1915-1919	1920-1924	1925-1929	1930-1934	1935-1939	1940-1944	1945-1949
75-79	1875-1879	1880-1884	1885-1889	1890-1894	1895-1899	1900-1904	1905-1909	1910-1914	1915-1919	1920-1924	1925-1929	1930-1934	1935-1939	1940-1944
80-84	1870-1874	1875-1879	1880-1884	1885-1889	1890-1894	1895-1899	1900-1904	1905-1909	1910-1914	1915-1919	1920-1924	1925-1929	1930-1934	1935-1939

Table 14: Cohort membership by age and period.
Cohorts can be traced along their diagonal. Cohorts highlighted in green are the deadliest male cohorts; cohorts highlighted in orange are the deadliest female cohorts. The dashed cohort of 1980-1984 is shared by males and females, for some provinces. Likewise, some male cohorts were more at-risk in the orange highlighted cohorts, but for the sake of parsimony these cohorts were not hashed.

Female cohorts have far fewer significant inter-cohort deviations as opposed to males and are generally flat up until the most recent cohorts beginning in the 1990s. That said, female cohorts do follow relatively the same pattern as male cohorts, with positive cohort deviations in the earliest cohorts, negative in the middle cohorts, and flat into positive deviations as of the 1950-1954 cohort. The main difference being, female cohorts have fewer significant deviations prior to the 1990s, and the coefficients are smaller and closer to zero. Also, as seen in Figure 15 below, the inter-cohort deviations for interpretable provinces for females is generally flat and closer to zero for the most suicidal male cohorts of 1969-1969 and 1970-1974. Evidently, cohort effects are differentiated by sex, and males and females perceived and internalised social forces differently.

The inter-cohort deviations confirm that the 1965-1969 was the deadliest for QC males. With an inter-cohort deviation of 0.24 ($p < 0.001$, 95% C.I. = 0.21 to 0.27), the 1965-1969 cohort had suicide rates 27% higher than the predicted rate by age and period main effects only. As seen in Figure 14, the peak of inter-cohort deviations for cohorts with a 15-19 age group is found in the 1965-1969 and 1970-1974 cohorts. Meaning, these cohorts came of age at the beginning of the emergence of youth suicide and committed suicide near its end. Further, they are the cohorts born in the wake of the Baby Boomer generation, if we use 1964 as the last year for the Baby Boomers. Essentially, these are the first cohorts for Generation X. This will be important in the discussion.

Figure 14: Estimated inter-cohort deviations of suicide for males in Québec.
Notes: the horizontal solid line represents no deviation from the expected suicide rates determined by age and period main effects. Points above the line represent cohorts with higher suicide rates than predicted by age and period main effects. The reverse is true when points are below the line. Points on or near the line represent no cohort effects, meaning that age and period main effects suffice in determining the suicide rates.

QC males have the highest deviation values for the 1965-1969 and 1970-1974 cohorts across provinces, as seen in Table 15a and in the Appendix Tables 48-49. Some provinces do come close like BC with 0.21 (23%; $p < 0.001$, 95% C.I. = 0.16 to 0.26) for the 1965-1969 cohort or 0.20 (22%; $p < 0.001$, 95% C.I. = 0.11 to 0.29) for SK. These values, as seen in Table 15a and in the Appendix, are higher than the preceding cohorts, and tend to decrease with every subsequent cohort. Further, they are the peak deviation values for QC and BC, and the first peaks for ON, SK, AB, and Atlantic Canada before the latter provinces peak again with later cohorts. Though, we do need to remain wary of deviation values for more recent cohorts because they have far fewer data points. Thus, although the higher deviation values are cause for worry, further research (and time) is required. All this being said, we can confirm that the 1965-1969 and 1970-1974 cohorts did have higher-than-expected suicide rates that can be attributed to cohort effects, concurring with the visual analysis of the interaction terms in the previous section. Male youth of Generation X had higher than expected suicide rates throughout their lifespan.

	15a. Inter-cohort deviation						15b. Intra-cohort slope					
	Saskatchewan		Québec		Atlantic Canada		Saskatchewan		Québec		Atlantic Canada	
Cohort	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
1870-1874	0.18		0.73	**	1.12	***	NA	NA	NA	NA	NA	NA
1875-1879	0.37		0.47	**	0.12		0.46		-0.08		-0.99	*
1880-1884	0.46	**	0.34	**	0.38	*	-0.02		-0.27		-0.10	
1885-1889	0.00		0.16		0.15		-0.85	*	-0.40		-0.44	
1890-1894	0.28	*	0.01		0.05		-0.80	**	-0.83	***	-0.67	*
1895-1899	0.13		0.14	*	0.04		-0.59	*	-0.45	**	-0.63	*
1900-1904	0.23	**	0.15	**	0.14		-0.27		-0.38	**	-0.18	
1905-1909	0.10		0.03		0.04		0.23		-0.14		0.11	
1910-1914	0.09		0.01		0.05		-0.23		-0.09		-0.06	
1915-1919	0.06		-0.09	**	0.03		0.12		-0.01		0.13	
1920-1924	-0.21	**	-0.11	***	-0.09		-0.54		0.02		0.43	*
1925-1929	-0.16	*	-0.14	***	-0.20	***	0.42		0.24	*	0.03	
1930-1934	-0.05		-0.19	***	-0.11	*	0.41		0.29	**	0.22	
1935-1939	-0.24	***	-0.27	***	-0.15	***	0.75	**	0.42	**	0.22	
1940-1944	-0.32	***	-0.21	***	-0.19	***	0.52	*	0.34	**	-0.01	
1945-1949	-0.20	***	-0.13	***	-0.18	***	0.07		0.08		-0.16	
1950-1954	-0.18	***	0.03		-0.12	***	-0.27		-0.14	*	-0.06	
1955-1959	0.04		0.15	***	-0.01		-0.10		-0.30	***	-0.11	
1960-1964	0.10	*	0.18	***	0.13	***	-0.43	***	-0.16	**	-0.20	*
1965-1969	0.20	***	0.24	***	0.15	***	-0.34	**	-0.08		-0.14	
1970-1974	0.22	***	0.23	***	0.18	***	-0.10		-0.29	***	-0.15	
1975-1979	0.24	***	0.19	***	0.11	*	-0.38	**	-0.42	***	-0.26	*
1980-1984	0.16	**	0.13	***	0.12	*	-0.21		-0.49	***	-0.10	
1985-1989	0.20	**	0.03		0.07		-0.23		-0.35	***	-0.02	
1990-1994	0.28	***	-0.10	*	0.21	**	-0.34	**	-0.05		-0.11	
1995-1999	0.09		-0.12	*	0.39	***	0.11		-0.03		-0.11	
2000-2004	0.52	***	-0.05		0.21		NA	NA	NA	NA	NA	NA

Table 15: Estimated inter-cohort deviations and intra-cohort life-course slopes for suicide in Saskatchewan, Québec, and Atlantic Canada males.

*Notes: The other provinces can be viewed in the annex. Coef. refers to coefficients. Sig. refers to significance levels. p-value: * < 0.05, ** < 0.01, *** < 0.001*

Inter-cohort deviation represents a cohort's average deviation from the predicted rate determined by age and period main effects. Intra-cohort life-course dynamic measures linear change in a cohort's interaction terms at different ages within that cohort. The intra-cohort slope should be interpreted in conjunction with the inter-cohort deviation. For example, a significant and negative intra-cohort slope with a significant and positive inter-cohort deviation, this means that the cohort's above average suicide rate decreases with age. See Table 16 for all possible combinations.
To not clutter the tables presented in-text, the confidence intervals for the inter-cohort deviation will be presented only in the tables found in the Appendix.

Female inter-cohort deviations results concur with the preliminary conclusions developed in the previous section. BC and ON have significant large deviations as of the 1985-1989 cohort for the former, and 1990-1994 for the latter. Table 16a below shows how ON inter-cohort deviations increased as of the 1980-1984 cohort – at the tail end of Generation X and beginning of the Millennials. But, as already mentioned, these cohorts have fewer data points compared to previous cohorts. This being said, deviation scores increase significantly with each subsequent cohort, with the average inter-cohort deviation usually skewed by the 15-19 age group. The interaction terms that follow the 15-19 category are often smaller but are still positive and large, as seen in Table 13 for females in ON. Thus, we can argue that there may be emerging cohort effects for cohorts born as of 2000-2004 in ON and BC.

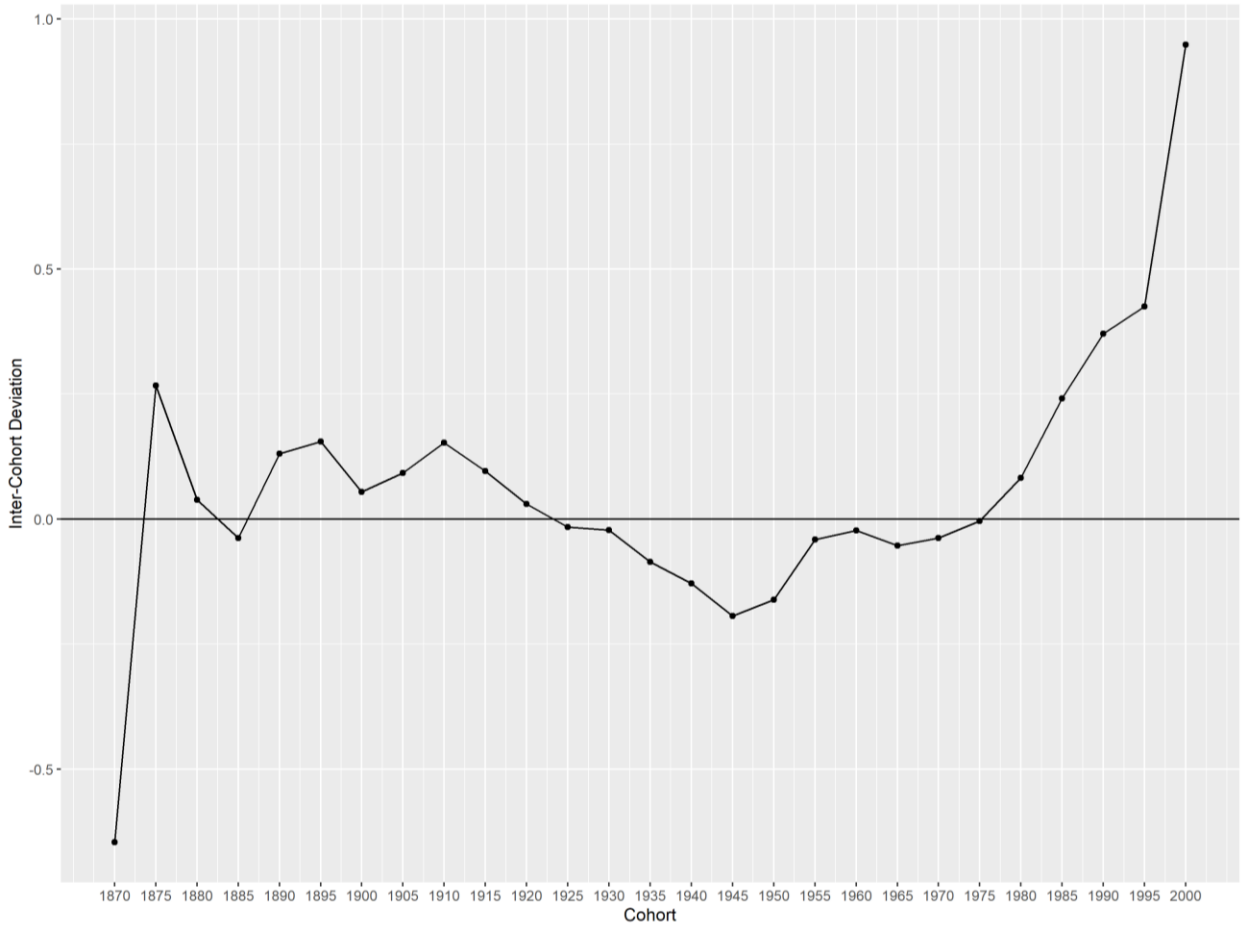

Figure 15: Estimated inter-cohort deviations of suicide for females in Ontario.
Notes: the horizontal solid line represents no deviation from the expected suicide rates determined by age and period main effects. Points above the line represent cohorts with higher suicide rates than predicted by age and period main effects. The reverse is true when points are below the line. Points on or near the line represent no cohort effects, meaning that age and period main effects suffice in determining the suicide rates.

Female suicide in other provinces have less obvious inter-cohort deviations. For the provinces that are interpretable, QC has no significant scores, with most being relatively flat or slightly negative, as seen in Table 16a. There is the exception of the 1870-1874 cohort with an outlier score of -19.22 ($1 - (e^{-19.22}) \approx 0.999999995434$) which is to be disregarded. AB does have some positive scores as of the 1985-1989 cohort, but the results are not significant. Nevertheless,

the values mirror the deviations for ON and BC but lack significance levels that are probably caused by outlier values.

	16a. Inter-cohort deviation						16b. Intra-cohort slope					
	Ontario		Québec		British Columbia		Ontario		Québec		British Columbia	
Cohort	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
1870-1874	-0.65		-19.22		-0.17		NA	NA	NA	NA	NA	NA
1875-1879	0.27		2.16		0.06		0.08		-0.26		0.27	
1880-1884	0.04		1.15		-0.03		-0.20		0.40		-0.14	
1885-1889	-0.04		0.67		-0.01		-1.13	***	0.21		-0.32	
1890-1894	0.13		0.74		-0.10		-0.20		-0.60		-0.35	
1895-1899	0.15	*	0.26		0.19		-0.39	*	-0.27		-0.37	
1900-1904	0.05		0.31		0.14		0.13		-0.45		0.03	
1905-1909	0.09		0.37		0.17	*	-0.17		-0.20		0.23	
1910-1914	0.15	***	0.41		0.15	*	0.32	*	0.07		-0.20	
1915-1919	0.10	*	0.07		0.11		0.29		-0.04		-0.17	
1920-1924	0.03		0.14		0.07		0.28		-0.10		0.14	
1925-1929	-0.02		0.08		-0.01		-0.06		-0.25		0.27	
1930-1934	-0.02		0.00		-0.12	*	-0.06		-0.25		-0.47	*
1935-1939	-0.09	*	-0.25		-0.12		0.21		-0.59		0.27	
1940-1944	-0.13	**	-0.23		-0.20	**	0.18		0.23		0.48	
1945-1949	-0.19	***	-0.15		-0.17	**	-0.16		0.02		-0.01	
1950-1954	-0.16	***	-0.08		-0.14	**	0.15		0.25		0.16	
1955-1959	-0.04		0.01		-0.01		0.15		-0.07		0.01	
1960-1964	-0.02		-0.09		-0.01		-0.01		0.07		-0.22	
1965-1969	-0.05		-0.13		0.03		0.13		0.28	*	-0.06	
1970-1974	-0.04		-0.15		0.00		-0.09		-0.29	*	-0.13	
1975-1979	0.00		-0.15		0.05		-0.28	*	-0.51	***	-0.35	*
1980-1984	0.08		-0.04		0.11		-0.40	***	-0.78	***	-0.16	
1985-1989	0.24	***	0.13		-0.04		-0.22	*	-0.78	***	-0.23	
1990-1994	0.37	***	-0.02		0.37	***	-0.15		-0.48	***	-0.08	
1995-1999	0.43	***	0.09		0.54	***	-0.03		-0.08		-0.17	
2000-2004	0.95	***	0.15		0.65	***	NA	NA	NA	NA	NA	NA

Table 16: Estimated inter-cohort deviations and intra-cohort life-course slopes for suicide in Ontario, Québec, and British Columbia females.

Notes: The other provinces can be viewed in the annex. Coef. refers to coefficients. Sig. refers to significance levels.
*p-value: * < 0.05, ** < 0.01, *** < 0.001*
Inter-cohort deviation represents a cohort's average deviation from the predicted rate determined by age and period main effects. Intra-cohort life-course dynamic measures linear change in a cohort's interaction terms at different ages within that cohort. The intra-cohort slope should be interpreted in conjunction with the inter-cohort deviation. For example, a significant and negative intra-cohort slope with a significant and positive inter-cohort deviation that the cohort's above average suicide rate decreases with age. See Table 16 for all possible combinations.
To not clutter the tables presented in-text, the confidence intervals for the inter-cohort deviation will be presented only in the tables found in the Appendix.

As it stands, we can posit a preliminary conclusion that cohort effects may exist for male youth suicidees as of the 1955-1959 cohort and especially for the 1965-1974 cohorts, where inter-cohort deviations were uninterpretable. For females, cohort effects are less obvious but may exist for the provinces of BC and ON, and for other provinces with non-significant values as of the 1985-1989 and 1990-1994 cohorts, respectively. Importantly, the inter-cohort deviation scores must also be interpreted in tandem with the intra-cohort slope results. Therefore, the results outlined above will be elaborated in the following section to determine the direction of the cohort

effects. It is not enough to state that certain cohorts had higher rates of suicide; we need to understand if the cohort effects increased, decreased, or plateaued as they aged. Further, this allows us to test the trends highlighted in the cohort interaction terms section. And lastly, cohort effects differ between the sexes, indicating a need to focus on them independently.

5.2.5 Intra-Cohort Life-Course Direction

The intra-cohort slope must be interpreted in tandem with the inter-cohort deviations. A linear orthogonal polynomial contrast was used to measure the slope of each cohort's age-by-period interaction terms. The first and last cohorts do not have an intra-cohort slope because they only have one age-by-period interaction term each. Knowing the sign and effect size of a cohort's inter-cohort deviation is simply not enough to ascertain cohort effects. The slope allows to measure intensity and life-course dynamics. For example, a significant positive deviation score with a significant positive slope implies that there was an increase in suicide over the cohort's lifespan. Table 17 below simplifies the possible combinations of inter-cohort deviations and intra-cohort slopes. Confidence intervals for inter-cohort deviation coefficients will not be presented in this section to reduce clutter – the values can be found in the Appendix Tables 51-53.

		Sign of intra-cohort slope		
		Positive	0	Negative
Sign of average cohort deviation	Positive	increasing	constant	leveling out
	0	leveling out	no pattern	leveling out
	Negative	leveling out	constant	decreasing

Table 17: Interpreting life-course dynamics of inter-cohort deviations and intra-cohort slopes.
Notes: Positive and negative signs refer to significant values. '0' means values that are non-significant and close to zero.

The intra-cohort slopes for males indicates three major findings. The cohorts prior to the emergence of youth suicide are better explained by age and period effects. Secondly, there were cohort effects during the emergence of youth suicide. Thirdly, QC males have the most cohorts with estimated cohort effects that are the strongest and most persistent among all provinces. When

we refer to cohort effects, we do not necessarily imply a cumulative or snowballing increase in suicides. Instead, in our case, we observe a sustained excess of suicides within the cohort as it ages, though this excess may not mirror the initial spike seen in the 15-19 age group. The values for 15- to 19-year-olds far exceed every other age group. Although, every subsequent age group still maintains above-average suicides as predicted by age and period main effects in the cohorts that were highlighted.

Inter-cohort deviations were negative and significant for roughly the cohorts born 1920-1924 up to 1945-1949 and their respective intra-cohort slopes are either significantly positive or insignificant. Rates were either leveling out or constant as they aged, as seen in Table 16. Essentially, suicide rates for youth were far below the global average and increased with age to then stabilise in adulthood along the mean – indicating a classic Durkheimian curve. This trend is also seen across all provinces for males, indicating a national pattern with some minor variations, transcending provincial differences. Importantly, we cannot say that the shifts in pre-emergence interaction terms for males are attributable to cohort effects. The cohorts up to the 1960-1964 were mostly insignificant, except for the 1960-1964 QC cohort.

Cohort effects are not likely to exist for the cohorts born in 1955-1959, with provincial variations. The 1955-1959 cohort lines up with the 15-19 group in the period of 1970-1974, the period wherein 15- to 19-year-olds saw rates above 10 per 100,000 across every province but the Atlantic. That said, not every province has significant values for this cohort. Only QC, AB, and ON have significant cohort deviations with significant negative cohort slopes. QC has a slope of -0.30 ($p < 0.001$) and a deviation of 0.15 (16%; $p < 0.001$); AB a deviation of 0.10 (11%; $p < 0.001$) and a slope of -0.30 ($p < 0.01$); and, ON has a slope of -0.22 ($p < 0.001$) and a deviation of 0.11

(12%; $p < 0.001$). Referring back to Table 17, this means that we can interpret the cohort effect as leveling out over its life-course.

The interaction terms for each province support the lack of an estimated cohort effect. The ON cohort effect quickly dies out after the 35-39 age group in 1990-1994 ($\beta_{Age \times Period} = 0.16$, 17%; $p < 0.01$), whereas the QC cohort effect persists a while longer up to 45–49-year-olds in 2000-2004 ($\beta_{Age \times Period} = 0.11$, 12%; $p < 0.001$). The AB cohort collapses faster than QC and ON as of the 25-29 age group. Essentially, we begin to see the spectre of cohort effects as of the 1955-1959 cohort for QC, ON, and AB. Although the cohort effects are not that of accumulation, the results indicate an excess of suicides within these cohorts that persists as it ages. Furthermore, it is a product of the emergence of youth suicide and indicative of socio-historical shifts.

The 1955-1959 cohort merely heralds the deluge of subsequent far more lethal cohorts. These cohorts do not abate in intensity following the initial drop after the 15-19 category. The subsequent cohorts increase in inter-cohort deviation, and the intra-cohort slopes move closer to zero (with certain exceptions), and some lose statistical significance. The latter does not indicate that the estimated cohort effect also loses significance. Rather, it means that the slope is near zero. Each province has a similar cohort, beginning in adjacent periods. Table 18 presents each province's cohort with the strongest cohort effect.

	Atlantic	**QC**	**ON**	**SK**	**AB**	**BC**
Cohort	1970-1974	1965-1969	1970-1974	1970-1974	1965-1969	1965-1969
inter-cohort deviation	0.18***	0.24***	0.17***	0.22***	0.19***	0.21***
intra-cohort slope	-0.15	-0.08	-0.14***	-0.10	-0.38***	-0.34***

Table 18: Male cohorts with the strongest cohort effects, by province.
*Notes: p-value: * < 0.05, ** < 0.01, *** < 0.001.*
Manitoba is left out of the table as their inter-cohort deviation and intra-cohort slopes are uninterpretable.

The complete tables can be found in the appendix.
Inter-cohort deviation represents a cohort's average deviation from the predicted rate determined by age and period main effects. Intra-cohort life-course dynamic measures linear change in a cohort's interaction terms at different ages within that cohort. The intra-cohort slope should be interpreted in conjunction with the inter-cohort deviation. For example, a significant and negative intra-cohort slope with a significant and positive inter-cohort deviation means that the cohort's above average suicide rate decreases with age. See Table 16 for all possible combinations.

QC, SK, and Atlantic Canada males have the most obvious cohort effect among provinces. The combination of the measures represents a constant cohort effect throughout their lifecycle. Their intra-cohort slopes are close to zero and insignificant, meaning that the interaction terms within that cohort are all relatively close in value. The 1965-1969 QC cohort has an average 27% higher rate of suicide than predicted by age and period main effects; for their part, the same SK cohort has 25% more suicides averaged across their lifetime. Atlantic Canada is a bit of an anomaly in comparison. Not only do they have a slightly weaker inter-cohort deviation, but their cohort effect fades in the later years. They have an age-by-period interaction term of 0.05 at the age of 45-49 in 2015-2019. This highlights another dimension, that we do not have the full cohort's lifespan when discussing cohort effects. Though, we have access to data indicating a turbulent adolescence and early adulthood marked by higher-than-average suicides affecting a specific subsection of the Canadian population.

The other provinces do not share a similar persistent cohort effect. Although the inter-cohort deviations in Table 18 are relatively the same across provinces, interaction terms for provinces other than QC and SK approach zero after the 40-44 age group. Essentially, cohort effects are present in youth and early adulthood, but non-existent thereafter. That being said, these results still indicate that the early adulthood period was particularly difficult for youth in each province. Although the cohort effects for males in some provinces do not persist, they are still note-worthy and exemplify shifts in male youth as of the 1970s for Generation X and early Millennials.

There are also weaker estimated cohort effects (in reference to the 1965-1969 cohort) for the 1960-1964 and 1970-1974 cohorts in QC males. Referring back to Table 15, QC males have an intra-cohort slope of -0.16 ($p < 0.01$) and an inter-cohort deviation of 0.18 (20%; $p < 0.001$) for the 1960-1964 cohort. The 1970-1974 cohort has a slope of -0.29 ($p < 0.001$) and a deviation of 0.23 (26%; $p < 0.001$). Both cohorts are leveling out as they age. With only these two metrics, it seems that the latter has a steeper decline than the former. That said, when referring to the interaction terms in Table 11, the steeper negative slope is due to larger values for the 15-24 age groups in the 1970-1974 cohort. The values that follow the 15-24 age groups are similar between the two cohorts. Further, and importantly, at no point do the cohorts fall below an age-by-period interaction term of 0.11. Meaning, there is always at least 12% more suicides within this cohort than predicted by age and period main effects. QC males have cohort effects for these two cohorts in addition to the stronger estimated cohort effects for the 1965-1969 cohorts.

In sum, for males, there are estimated constant cohort effects for the 1965-1969 cohort for QC and SK, and a weaker constant cohort effect for the 1970-1974 cohort in Atlantic Canada. In addition, there are slightly weaker leveling out cohort effects for QC males for the 1960-1964 and 1970-1974 cohorts. The other provinces have weaker to no sustained cohort effects. Although there are no estimated cohort effects for the other provinces, there are still indications that cohort effects are present up into mid-adulthood for ON, AB, and BC for the 1965-1969 cohort. This highlights an important finding. What is so particular about the 1965-1969 cohort and more widely, the adjacent cohorts? What happened during this time period that led to an over-mortality of male youth? Further, why did this cohort continue to commit suicide as they aged in QC, SK, and Atlantic Canada and to a lesser degree, across other provinces?

Female estimated cohort effects are found in cohorts with less data (as they began too late in the study period) and there are only three interpretable provinces. No cohort effect is measured for females within the same cohorts as males. Though, there are possible estimated cohort effects for females in the most recent cohorts beginning in the ON 1985-1989 cohort and 1990-1994 cohort in BC. Yet, these cohorts only reach the age of 30-34 and 25-29 in the 2015-2019. In essence, estimated cohort effects for females will be expanded below but their true existence remains unknown barring clairvoyance or decades of waiting.

Table 16 above presents the inter-cohort deviations and intra-cohort slopes for females in ON, QC, and BC. Similarly to males, all three provinces have negative inter-cohort deviations for the cohorts (1935-1939 to 1950-1954) preceding the emergence of youth suicide, with BC and ON having significant values. Their corresponding intra-cohort slopes are all insignificant and generally positive across the cohorts. As such, the estimated cohort effects for these cohorts are constantly negative, indicating lower-than-expected suicides as predicted by age and period main effects.

The following cohorts of 1955-1959 to 1980-1984 have little to no discernible pattern. The values are insignificant across all three provinces except for QC. QC females have a significant positive intra-cohort slope of 0.28 ($p < 0.05$) for the 1965-1969 cohort, with a corresponding insignificant inter-cohort deviation value of -0.13 (-12%; $p > 0.05$). The age-by-period interaction terms for this cohort indicate that the cohort increased from a large negative value at the age of 15-19 in 1980-1984 and leveled out at near zero values. Meaning, that no estimated positive cohort effect exists. This same cohort of 1965-1969 had cohort effects for their male counterparts, though they were not mirrored. The subsequent cohorts for QC females do not present any cohort effects whatsoever.

Females have estimated cohort effects in ON before BC. ON has an inter-cohort deviation of 0.24 (27%; $p < 0.001$) for the 1985-1989 cohort with a slope of -0.22 ($p < 0.05$). Therefore, indicating a leveling-out effect, as exemplified in Table 17. The subsequent female cohorts of 1990-1999 may have estimated cohort effects to the same degree as the 1965-1974 male cohorts in QC, SK, and Atlantic Canada. A lack of data points is the only limiting factor to presenting a more definitive conclusion. That said, BC and ON females for the 1990-1999 cohorts present mirrored results of significantly large positive inter-cohort deviations with insignificant slope values. These findings signify a powerful constant cohort effect with inter-cohort deviations of 0.37 (45%; $p < 0.001$) and 0.43 (54%; $p < 0.001$) for 1990-1994, and 0.37 (45%; $p < 0.001$) and 0.54 (72%; $p < 0.001$) for 1995-1999 in ON and BC, respectively. Accordingly, membership in these cohorts leads to higher-than-average suicide rates predicted by age and period main effects that persist as they age.

Female estimated cohort effects are evidently strong – stronger than male cohort effects. The issue being, there are not enough data points currently available to map a more complete image of cohort effects. It will be incredibly important to measure cohort effects for the 1990-1999 cohorts in ON and BC in the coming decades. Further, future research should find a way to measure cohort effects in SK and MB, AB, and Atlantic Canada seeing as how the increases in suicide among 15- to 24-year-olds females in ON and BC were 'mild' in comparison.

5.2.6 Predicted APC-I Rates

Predicted rates were calculated as follows:

$$\hat{\lambda} = \frac{e(\beta_0 + \beta_x)}{e(\beta_0 + \beta_x) + 1} \times 100{,}000$$

Where:

- $\hat{\lambda}$ is the predicted rate

- e is Euler's number
- β_0 is the intercept
- β_x is the coefficient for age and period main effects, or cohort (age-by-period interaction terms)

The predicted rates for the full APC-I model were calculated as follows:

$$\hat{\lambda} = \frac{e(\beta_0 + \beta_{\text{age}} + \beta_{\text{period}} + \beta_{\text{cohort}})}{e(\beta_0 + \beta_{\text{age}} + \beta_{\text{period}} + \beta_{\text{cohort}}) + 1} \times 100{,}000$$

The predicted rates for the age and period (AP) model were calculated as follows:

$$\hat{\lambda} = \frac{e(\beta_0 + \beta_{\text{age}} + \beta_{\text{period}})}{e(\beta_0 + \beta_{\text{age}} + \beta_{\text{period}}) + 1} \times 100{,}000$$

The predicted rates for the age-only model were calculated as follows:

$$\hat{\lambda} = \frac{e(\beta_0 + \beta_{\text{age}})}{e(\beta_0 + \beta_{\text{age}}) + 1} \times 100{,}000$$

Graphics were made comparing age and period main effects (AP model) against the full APC-I model. Any deviation from the AP curve indicates a possible cohort effect. The percentage deviation presented on the figures is the exact effect cohort membership has on the suicide rate. More precisely, the percentage value is the same as when exponentiating the age-by-period interaction term. Figures for predicted rates were created for cohorts 1940-1944 to 1980-1984 for males and 1955-1959 to 1995-1999 for females. The choice of cohorts was done to present the most notable cohorts for each sex, while maintaining a parsimonious presentation of data on each figure. Not all provinces will be displayed within the body of the text, but they are all found in the Appendix Figures 68-95.

Importantly, and above all else, we see that most of the major points of deviation for males happen within the 15-29 age groups as of the 1965-1969 cohort, and especially for 20- to 24-year-

olds. This finding suggests that entry into adulthood was considerably difficult for youth across Canada and across sex, beginning in the 1960s. Further, that they fronted the greatest burden of cohort membership effects on suicide, as deviations from the AP line are the strongest in the 20-29 groups.

Figure 16 shows that cohort effects were nearly non-existent or were negatively impacting the APC-I curve in the middle-age groups up until the 1960-1964 cohort. One can even argue that negative cohort effects seem to be impacting the 1940-1944 and 1945-1949 cohorts for QC males. This would concur with the significant negative inter-cohort deviations of these cohorts as seen in Table 15a. In addition, the APC-I curve was essentially symmetric to the AP curve, barring some minor differences. Thus, cohorts up to the 1960-1964 cohort are better explained by age and/or period main effects.

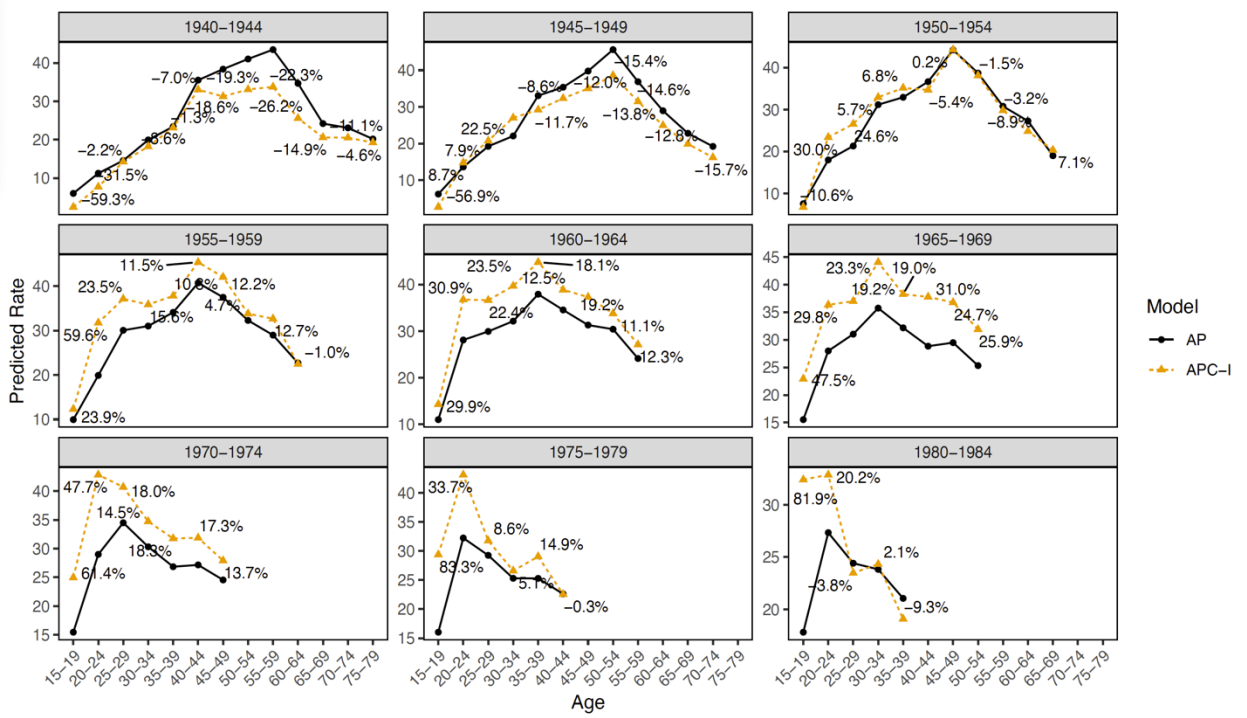

Figure 16: Predicted suicide rates by model and cohort for Québec males.
Notes: AP refers to the combination of age and period main effects; APC-I refers to the complete model: age, period, and age-by-period interaction terms. The percentage difference between the models represents the cohort effect for each age group.

Cohort effects are first noticeable in QC males as of the 1960-1964 cohort. There is a persistent positive deviation throughout the whole lifecycle of the cohort. At no point do the age-by-period interaction terms for the 1960-1964 cohort fall below zero. Further, the visual in Figure 16 reflects the significant positive inter-cohort deviation and significant negative slope; the percentage values are relatively large, but they slowly decrease as the cohort ages.

The following cohort, 1965-1969, has almost the same pattern as the 1960-1964 cohort but the percentage values are larger. The same is also seen in SK (Figure 17) and Atlantic Canada (Figure 18). The distance between the two curves is larger than all previous cohorts, and the percent differences are all relatively close to each other. In addition, the tight grouping of percentage differences reflects the insignificant intra-cohort slope for QC and Atlantic Canada. The cohort of 1970-1974 is a better representation of this phenomenon for SK, wherein no value falls below the AP curve and percent deviations across the lifecycle are closer together. Clearly, the 1965-1969 and 1970-1974 cohorts may have experienced cohort effects that persisted up to the end of the study period. Subsequent cohorts may also have cohort effects but are more skewed towards youth age groups.

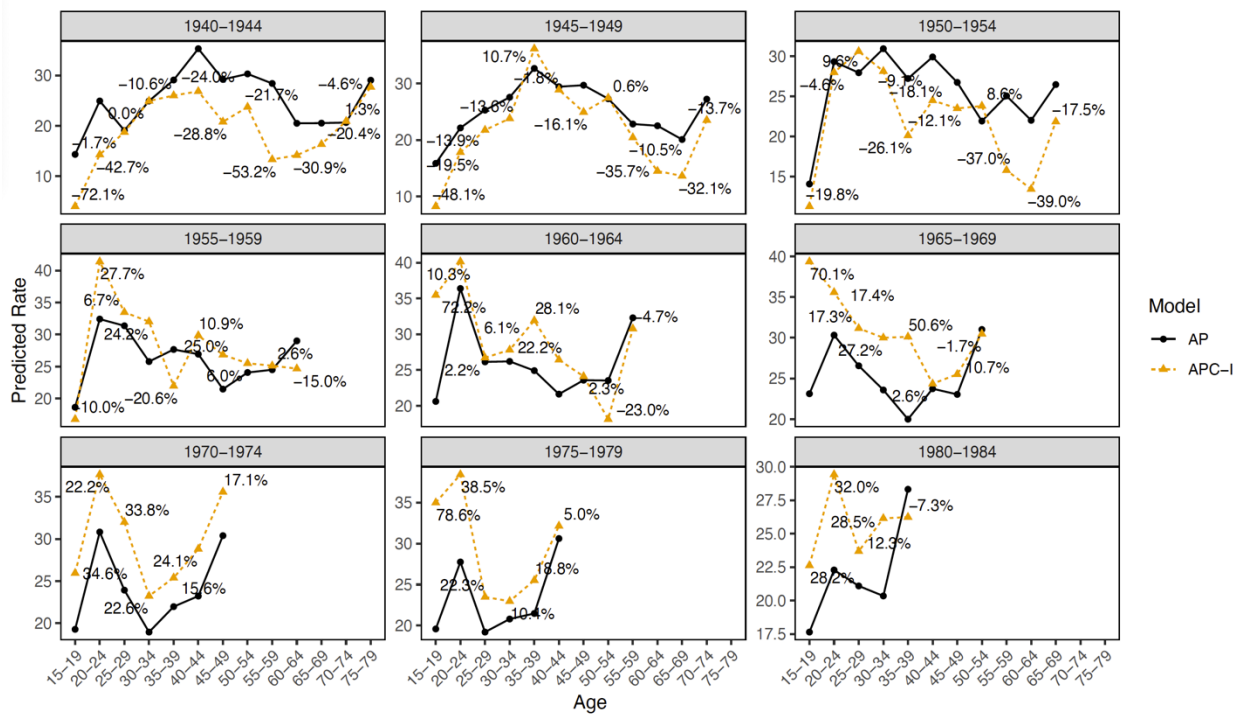

Figure 17: Predicted suicide rates by model and cohort for Saskatchewan males.
Notes: AP refers to the combination of age and period main effects; APC-I refers to the complete model: age, period, and age-by-period interaction terms. The percentage difference between the models represents the cohort effect for each age group.

Suicide among males 15- to 29-year-old is best explained by cohort effects. The highest percentage differences are seen within these age groups, as is seen in Figure 17 and Figure 18 for SK and Atlantic Canada that echo the results of QC. APC-I predicted rates for 20- to 24-year-olds consistently have some of the highest percent deviations from the AP curve, with some minor variations. This also goes for every other province. Essentially, the predicted rate graphs represent the difficulties faced by youth as they enter into early adulthood.

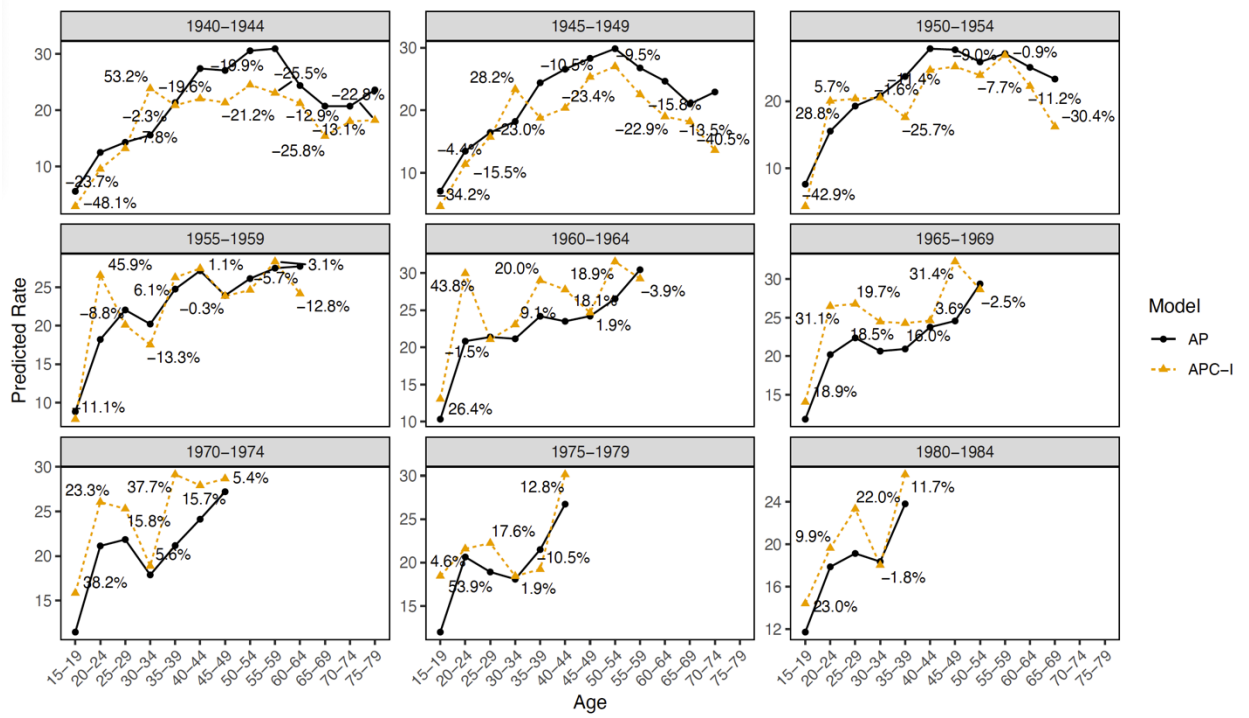

Figure 18: Predicted suicide rates by model and cohort for Atlantic Canada males.

Notes: AP refers to the combination of age and period main effects; APC-I refers to the complete model: age, period, and age-by-period interaction terms. The percentage difference between the models represents the cohort effect for each age group.

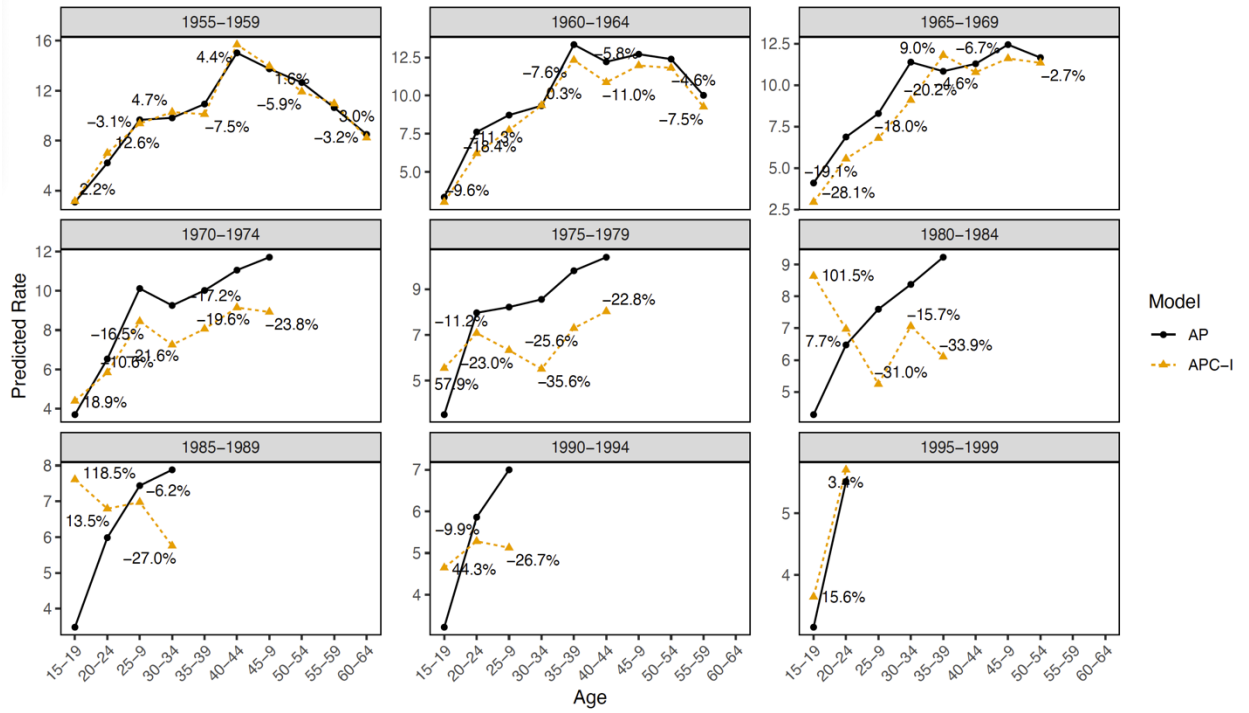

Figure 19: Predicted suicide rates by model and cohort for Québec females.

Notes: AP refers to the combination of age and period main effects; APC-I refers to the complete model: age, period, and age-by-period interaction terms. The percentage difference between the models represents the cohort effect for each age group.

Predicted rates for females also follow similar patterns to males as it pertains to the lead up to more suicidal cohorts. As seen in Figure 19, 20, and 21, the APC-I curve matches or is found below the AP curve up until the 1980-1984 cohort. Whereas QC females only see serious cohort effects in 15-24 age groups, ON and BC see near persistent cohort effects in cohorts after and including the 1980-1984 cohort. Notably, and in contrast to males, female cohort effects are most pronounced among 15- to 19-year-olds. This finding reflects the descriptive statistics that found a sharp increase in suicidality among this age group. Further, it implies that suicide within this age group is best associated with cohort effects and agrees with the findings for males.

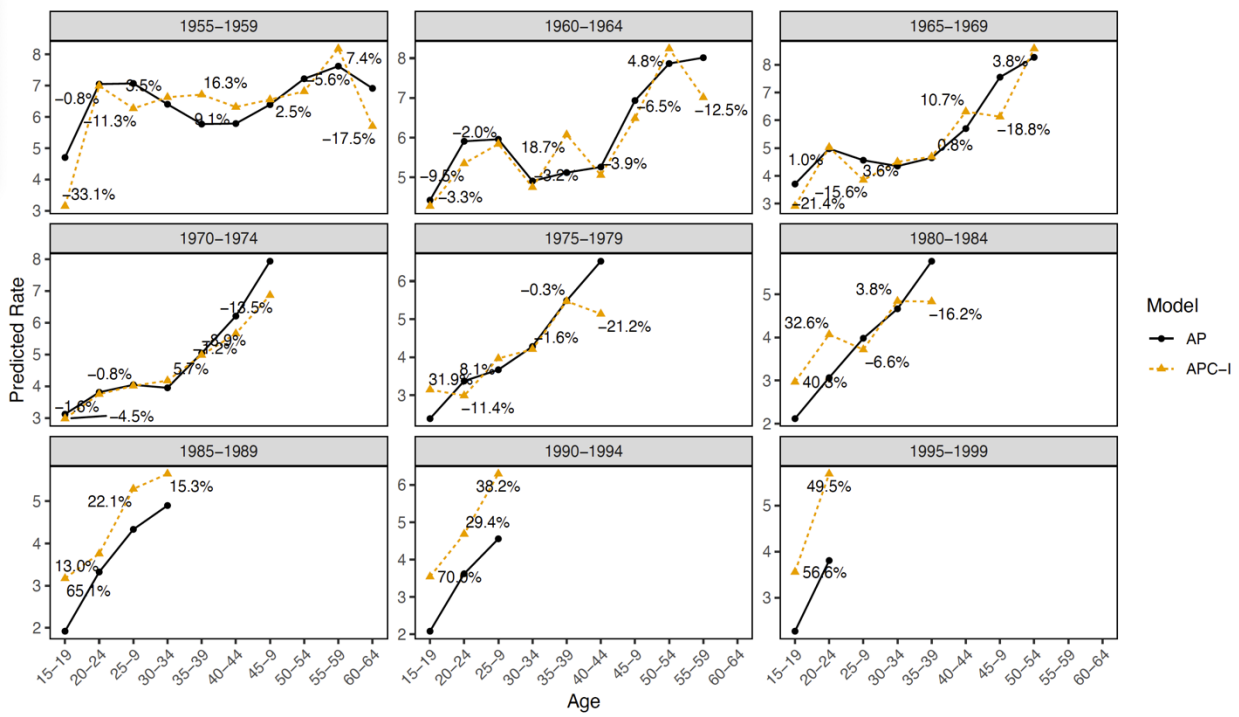

Figure 20: Predicted suicide rates by model and cohort for Ontario females.
Notes: AP refers to the combination of age and period main effects; APC-I refers to the complete model: age, period, and age-by-period interaction terms. The percentage difference between the models represents the cohort effect for each age group.

Figure 20 and 21 presents the predicted suicide rates for ON and BC females. In contrast to the predicted rates for QC, the APC-I curve for ON and BC demarcates itself from the AP line as of the 1985-1989 cohort for ON and 1990-1994 cohort for BC. That said, and as explained above,

the predicted rate figures give a visual representation of the few data points available for these cohorts. It is possible to state that cohort effects are impacting the suicide rates for these cohorts. Now, whether they will persist as the cohorts age is outside of the scope of the evidence currently available. The 1985-1989 and 1990-1994 cohorts for ON have strong estimated cohort effects that require further scrutiny as they age.

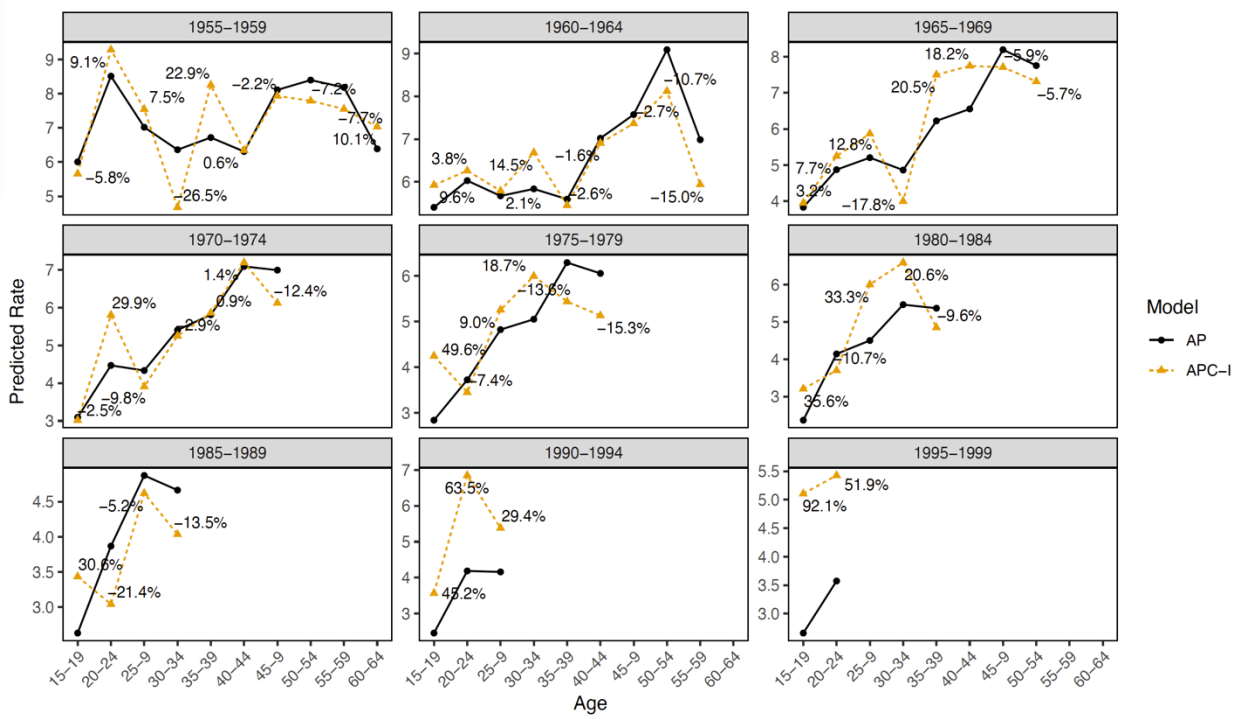

Figure 21: Predicted suicide rates by model and cohort for British Columbia females.
Notes: AP refers to the combination of age and period main effects; APC-I refers to the complete model: age, period, and age-by-period interaction terms. The percentage difference between the models represents the cohort effect for each age group.

It is altogether possible that the male cohort effects triggered by the emergence of youth suicide in the 1960s and 1970s has begun in the past three decades for females. Thus, special attention must be given to female youth suicide. We may be witness to the beginnings of female cohort effects for youth born in the 1990s.

Predicted rates were also calculated to compare age-only main effects against the full APC-I model. These graphics were necessary to illustrate the deviations from a Durkheimian curve that I theorise as being predicated on age main effects. Technically, if the Durkheimian curve stands

true, the APC-I predicted curve should not shift significantly from the age-only curve. Any deviation from symmetry would indicate a break from traditional suicide patterns. As seen above, the age-only curve was low during adolescence, increased into adulthood, and decreased slightly into late-adulthood, across provinces. Thus, any deviation from the age curve may imply cohort effects. In addition, plotting predicted rates comparing an age-only model and the APC-I model by period allows for an easier visual analysis of period effects.

A deviation below or above the age curve for all age groups, with no significant modification in the shape of the curve, may imply period effects. If, at any moment, the APC-I curve is no longer symmetrical with the age-only curve and these shifts happen for specific age groups, we can argue the possible presence of cohort effects. Detailed examples will be given below for specific provinces; provinces previously uninterpretable will also be presented for females. The curves themselves are accurate, though their coefficients and predicted rates may advise caution. Also, all figures can be viewed in the Appendix as not every province will be presented herein.

The predicted rates comparing the APC-I model and the age-only model highlight two major findings: (1) period effects greatly impacted the APC-I curve during the emergence of youth suicide for males and females; (2) these figures concur with the predicted rates presented above that cohort effects were greatest among youth. The cohort effects among the periods align with the cohort effects presented above. In essence, entry into adulthood may have had a disproportionate impact on youth suicide rates.

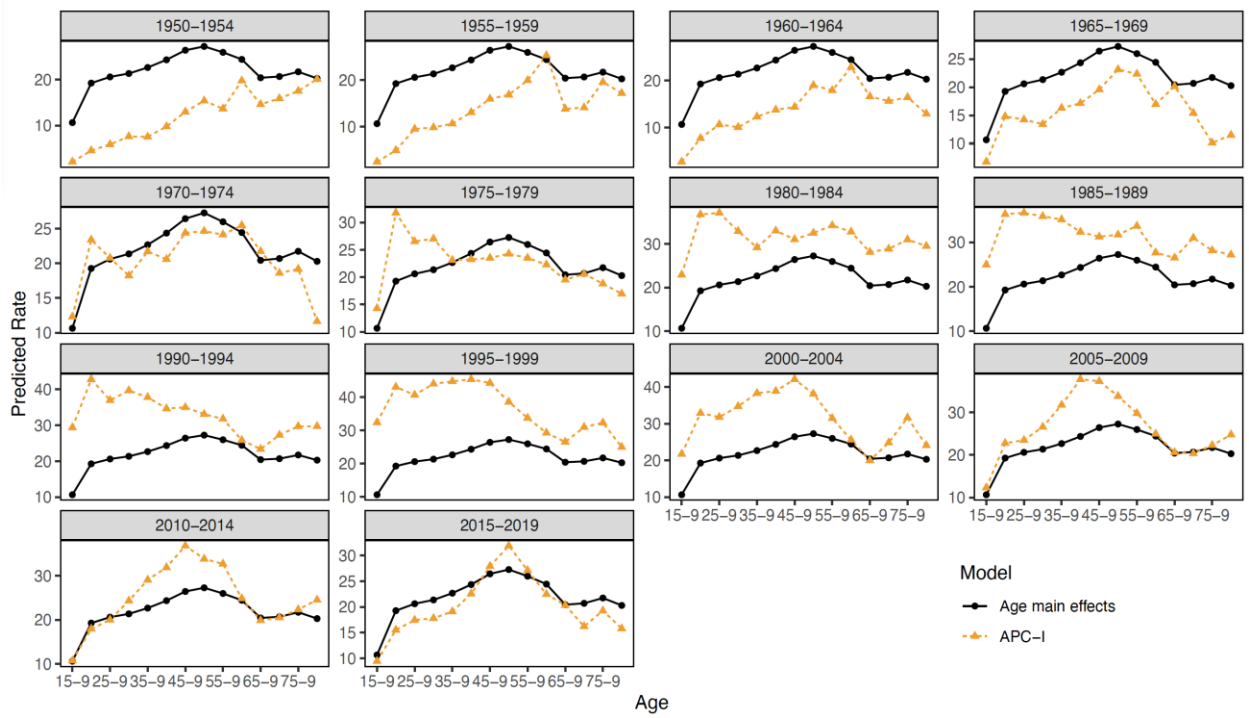

Figure 22: Predicted suicide rates for Québec males, by model and period.
Notes: the age-only curve represents the predicted suicide rates with age main effects only. The APC-I curve represents the predicted rates with the full APC model (age, period, and cohort effects). Any deviation from the age-only curve indicates possible period and/or cohort effects across the various time periods.

Firstly, figure 22 depicts the predicted rates for QC males, with period effects lasting from 1980-1984 up to 2000-2004. Clearly, the emergence of youth suicide coincided with an over-mortality across all age groups. But, and most importantly, youth age groups peak higher than others and break symmetry with the age main effects curve. It is here that we can attribute cohort effects among males. Within these periods, cohort effects acted upon the suicide rates of youth in tandem with period effects, beginning with a large increase in suicide rates in the 15-34 age range, and especially for 20- to 24-year-olds.

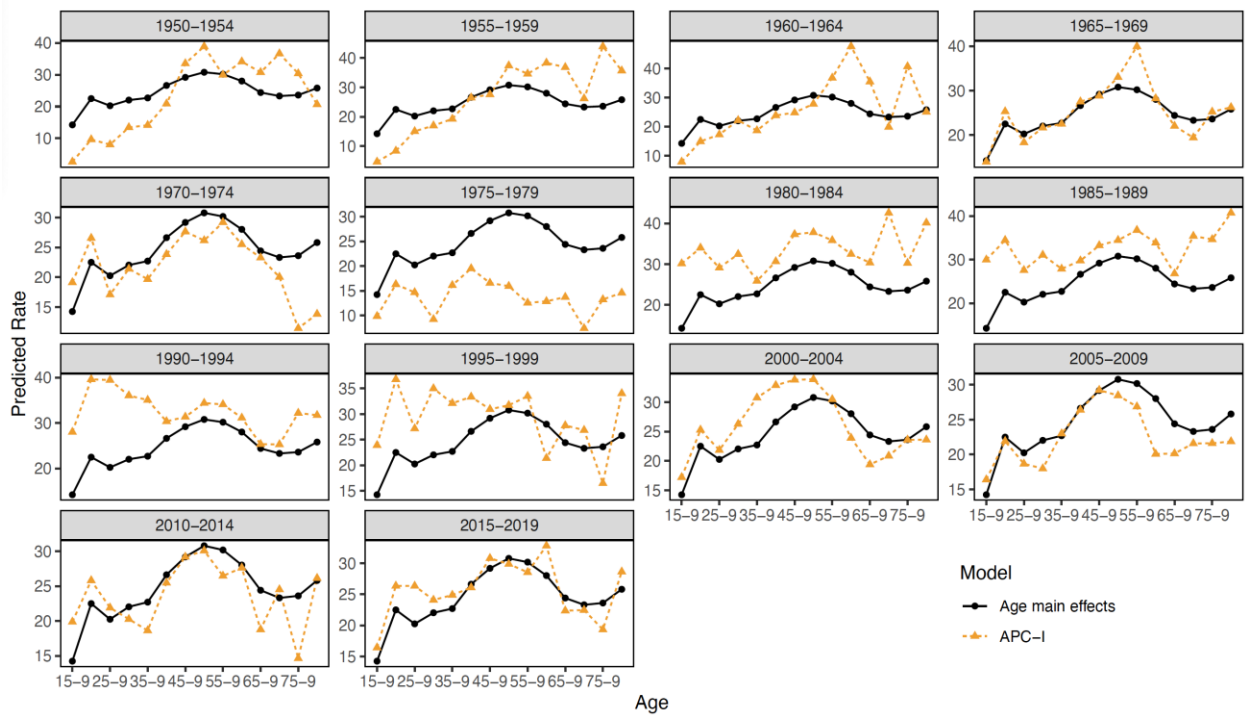

Figure 23: Predicted suicide rates for Alberta males, by model and period.
Notes: the age-only curve represents the predicted suicide rates with age main effects only. The APC-I curve represents the predicted rates with the full APC model (age, period, and cohort effects). Any deviation from the age-only curve indicates possible period and/or cohort effects across the various time periods.

AB also experiences similar period effects in Figure 23. They have similar cohort effects among 15- to 34-year-olds, as seen in the 1980-1984 period. The APC-I curve for 15- to 34-year-olds inverses the age main only curve, with a linear decrease in predicted rates with each subsequent age group. This persists for AB males up to 1995-1999, just like QC males in Figure 22. An anomaly among the provinces, AB has a negative period effect for the 1975-1979 period, matching the descriptive statistics.

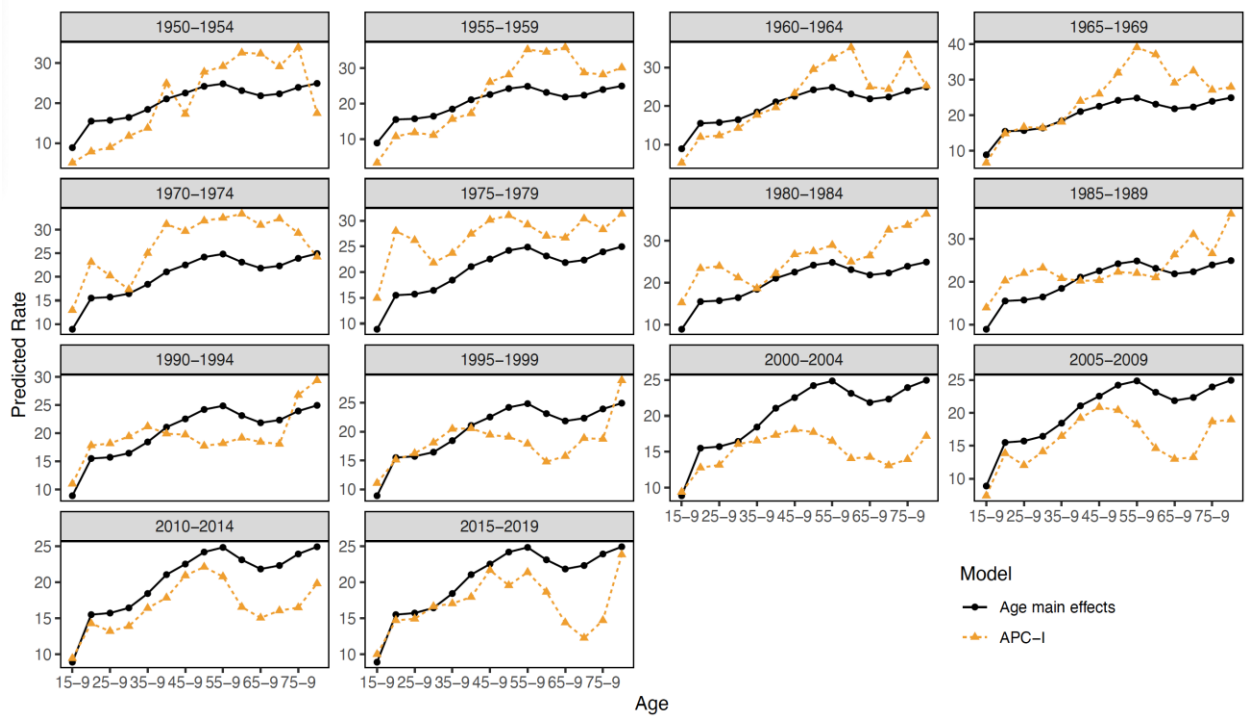

Figure 24: Predicted suicide rates for Ontario males, by model and period.
Notes: the age-only curve represents the predicted suicide rates with age main effects only. The APC-I curve represents the predicted rates with the full APC model (age, period, and cohort effects). Any deviation from the age-only curve indicates possible period and/or cohort effects across the various time periods.

ON male period effects in Figure 24 reflect the differences previously highlighted among the descriptive statistics. Like BC males, ON males experienced the emergence of youth suicide and increases in suicide rates across all age groups earlier than every other province. Further, like QC, AB, and every other province, youth rates experience cohort effects in tandem with period effects. By the time QC, AB, or SK began seeing period effects as of the 1980s, ON and BC were already 'back to normal'. But the return to normality was only for age groups older than 35 to 39. ON males aged 15 to 39 continued to have APC-I predicted rates above the age only curve up to 1990-1994. Cohort effects are thus more apt at explaining youth suicide for males.

Females also experience similar period effects as males. The period effects tend to mirror the descriptive statistics. Figures 25 and 26 present the predicted rates by period for ON and BC. Female ON period effects are more pronounced than their male counterparts. Further, the ON age

main effects and APC-I curves are more bell shaped for females, with larger deviations between the curves among middle-aged adults. The bell shape changes over time, assuming a plateau-like shape as of the 2000s.

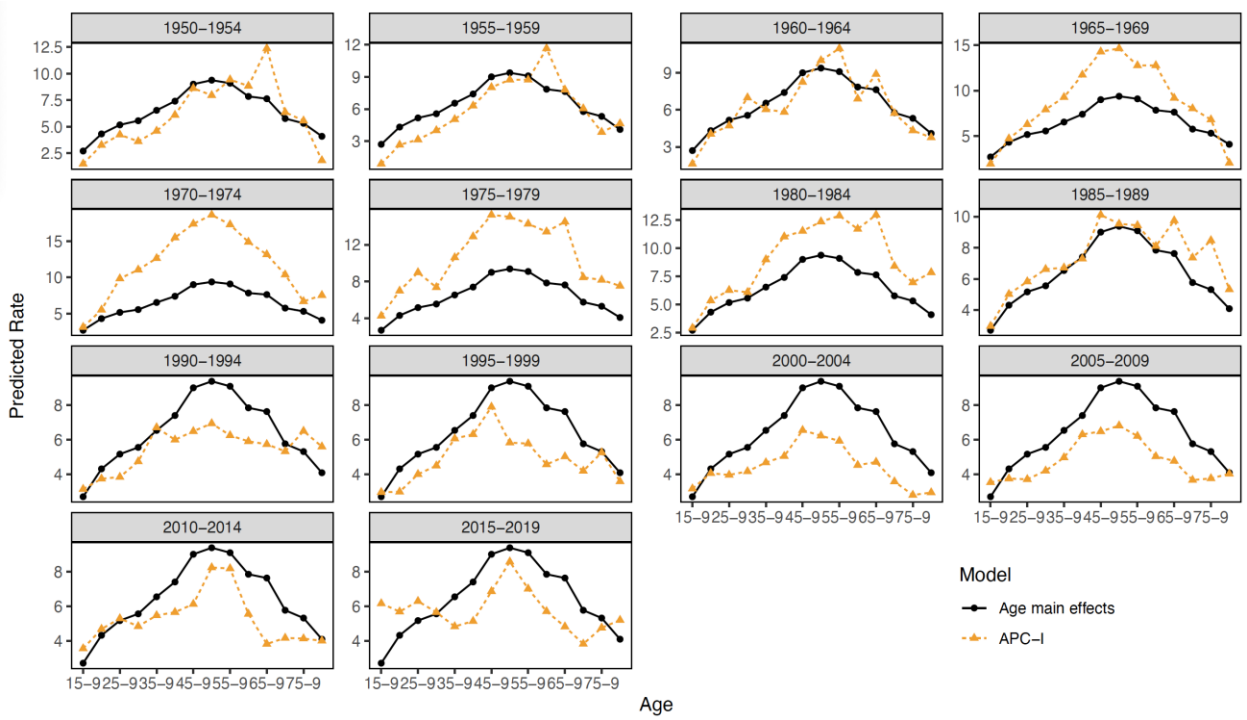

Figure 25: Predicted suicide rates for Ontario females, by model and period.
Notes: the age-only curve represents the predicted suicide rates with age main effects only. The APC-I curve represents the predicted rates with the full APC model (age, period, and cohort effects). Any deviation from the age-only curve indicates possible period and/or cohort effects across the various time periods.

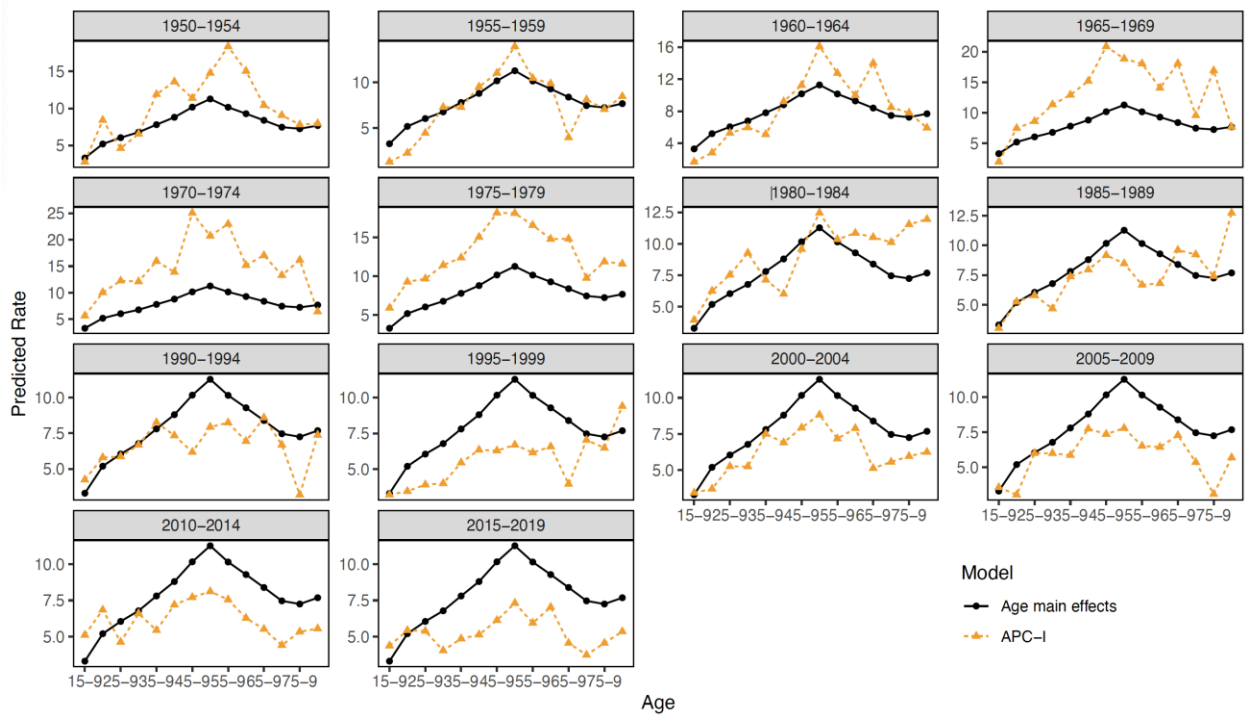

Figure 26: Predicted suicide rates for British Columbia females, by model and period.
Notes: the age-only curve represents the predicted suicide rates with age main effects only. The APC-I curve represents the predicted rates with the full APC model (age, period, and cohort effects). Any deviation from the age-only curve indicates possible period and/or cohort effects across the various time periods.

SK, MB, AB, and Atlantic Canada also have noticeable cohort effects for youth when graphically displayed in the predicted rate plots. Figures 27 to 29 for SK, MB, and AB paints a completely different picture of APC effects on female rates that was indecipherable when analysing the regression coefficients themselves. Atlantic Canada can be viewed in the Appendix but equally displays cohort effects. All four provinces have relatively obvious period effects for the periods 1970-1974 up to 1980-1984, matching their male counterparts. Atlantic Canada strays slightly, indicating possible cohort effects as early as 1975-1979 for youth. Further, and more importantly, cohort effects among female youth can be perceived in all four provinces as of 1985-1989. These cohort effects persist into the last period of 2015-2019 and gain in strength with time.

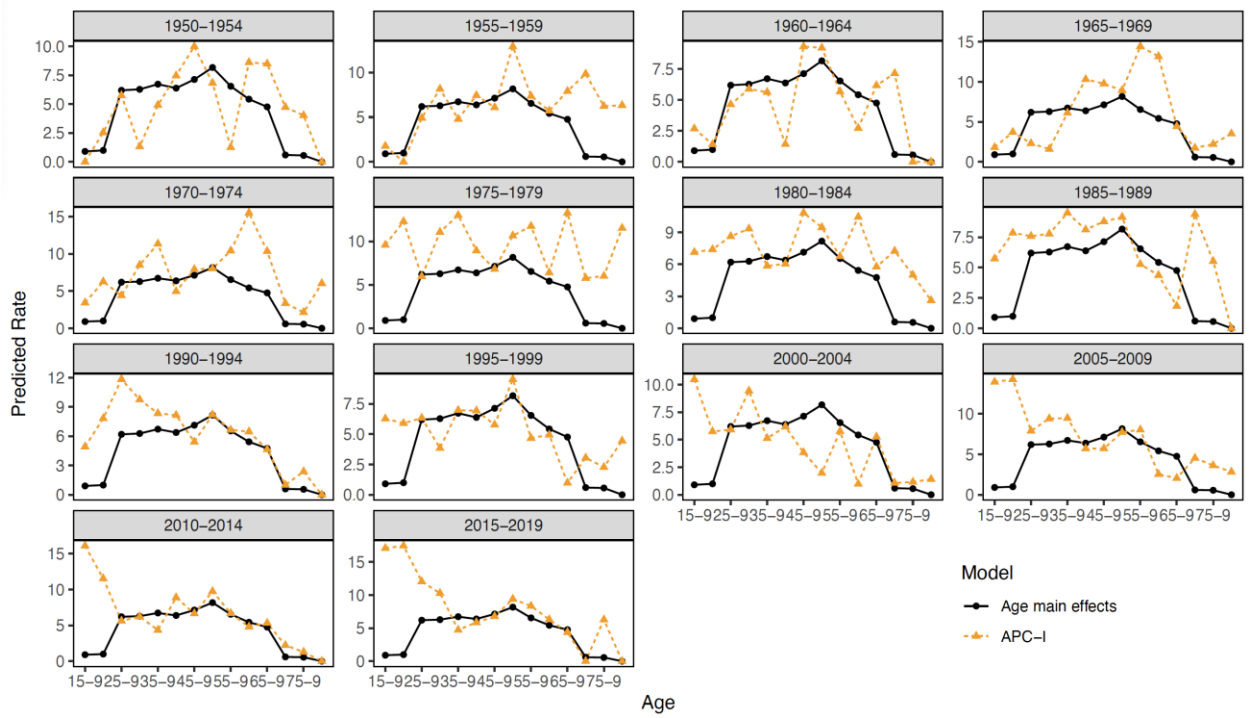

Figure 27: Predicted suicide rates for Saskatchewan females, by model and period.
Notes: the age-only curve represents the predicted suicide rates with age main effects only. The APC-I curve represents the predicted rates with the full APC model (age, period, and cohort effects). Any deviation from the age-only curve indicates possible period and/or cohort effects across the various time periods.

Atlantic Canada female youth have estimated cohort effects as of 1975-1979, around the same time as their male counterparts. Atlantic Canada is the only region among females to do so. Like their male analogues, cohort effects for youth persist into the most recent periods. The 15-19 age group consistently breaks symmetry with the AP curve throughout the periods, from 1975-1979 to 2015-2019. Alongside the cohort effects, period effects seem to take hold in the final period of 2015-2019.

SK, and MB have more pronounced cohort effects among youth than AB. The APC-I predicted rate curve is completely inversed as of 1985-1989 for SK and MB, whereas AB experiences more of a plateauing of predicted rates. In addition, the APC-I predicted curve for SK and MB completely detaches itself and breaks symmetry from the age-only curve as of 2010-2014 for 15- to 39-year-olds. Cohort effects may exist among females born in the 1990s, and especially

for those in SK, MB, Atlantic Canada, and AB. Entrance into adulthood seems particularly fraught for females within these birth cohorts.

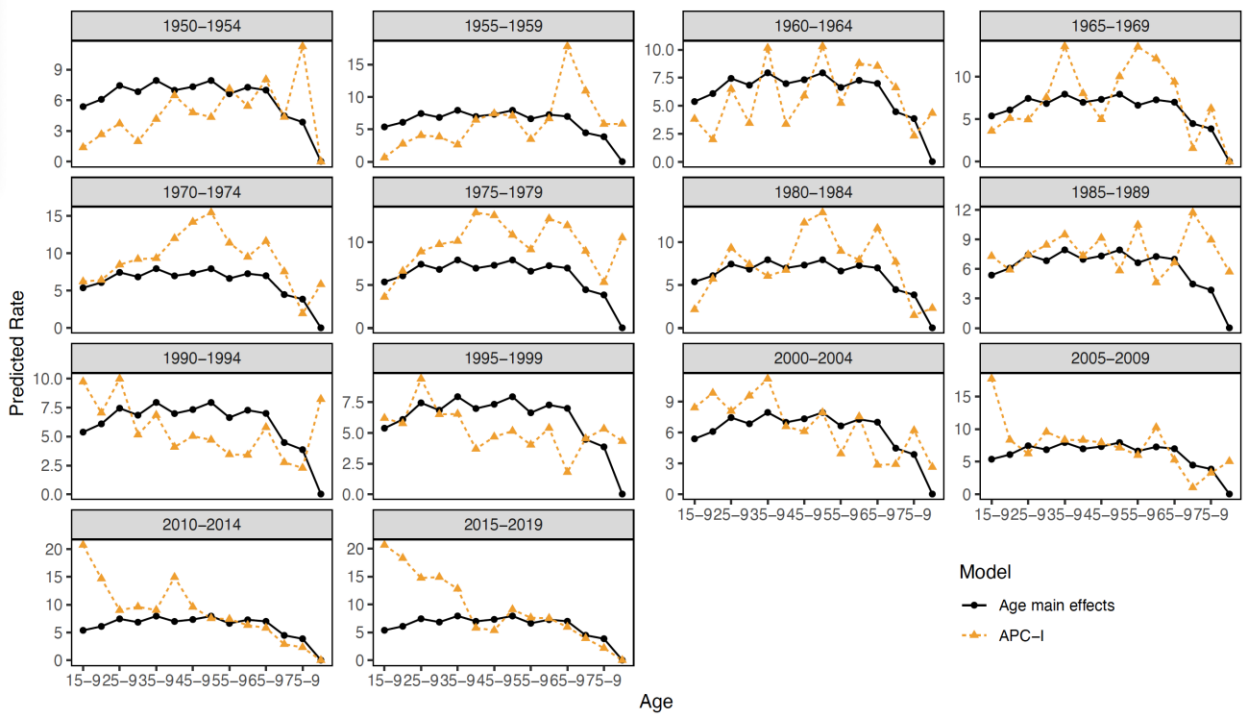

Figure 28: Predicted suicide rates for Manitoba females, by model and period.
Notes: the age-only curve represents the predicted suicide rates with age main effects only. The APC-I curve represents the predicted rates with the full APC model (age, period, and cohort effects). Any deviation from the age-only curve indicates possible period and/or cohort effects across the various time periods.

The predicted rate plots show that cohort effects were most pronounced among youth groups. Youth suicide rates as of the 1960s are best explained by cohort effects. Some cohorts, notably males born between 1960 and 1974 had estimated cohort effects that spanned their lifespan up to the most recent available data. Their suicide rates remained above the average predicted by age and period main effects and were maintained throughout their lifecycle. Females born as of the 1985-1989 have estimated cohort effects. Their cohorts are about two decades younger than their male counterpart, but their rates are far above the average and merit continued observation as they age.

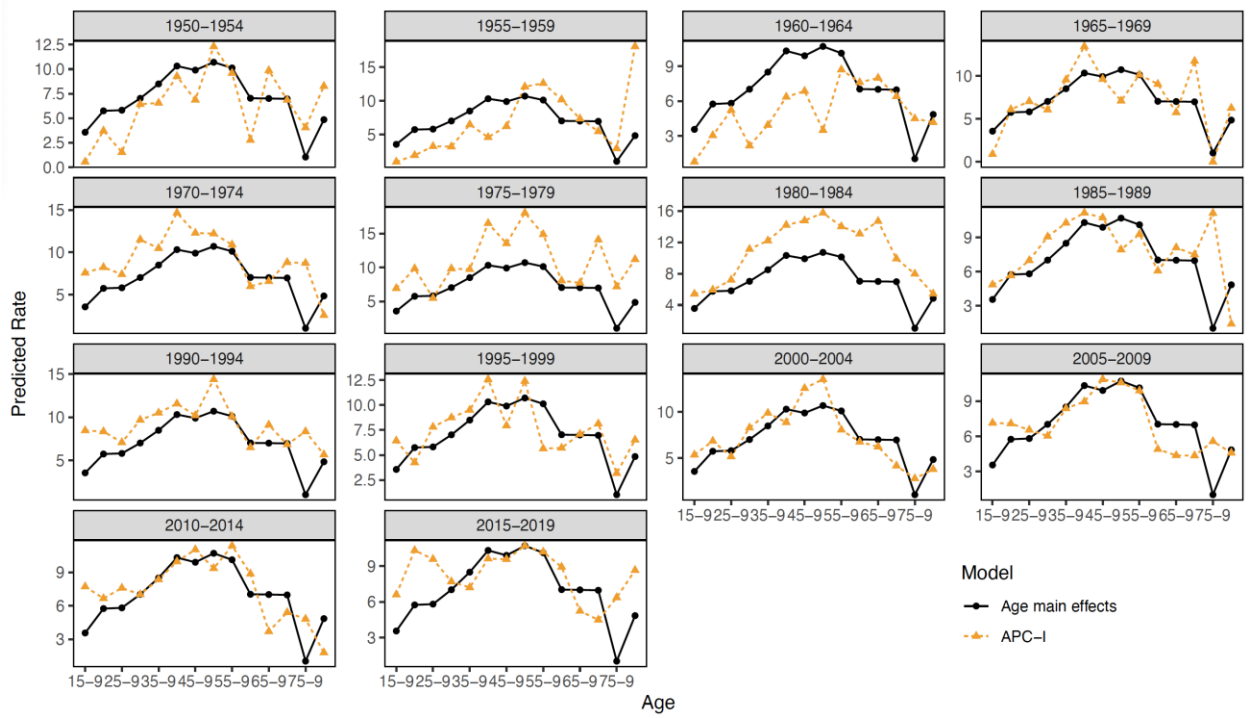

Figure 29: Predicted suicide rates for Alberta females, by model and period.
Notes: the age-only curve represents the predicted suicide rates with age main effects only. The APC-I curve represents the predicted rates with the full APC model (age, period, and cohort effects). Any deviation from the age-only curve indicates possible period and/or cohort effects across the various time periods.

The estimated cohort effects measured for males and females are seen across all provinces, with some variation between them. Nonetheless, it is incredibly telling that the estimated cohort effects are present across every province as it implies large socio-historic shifts and implications. Evidently, the emergence of youth suicide is a phenomenon of its time and that it persists is also of sociological importance. A major shift in how youth perceive their future may have led to an increase in suicide that continues to this day.

5.3 Results Conclusion

The results have demonstrated that suicide rates for male and female youth began to rise as of the 1960s. Further, the classic Durkheimian curve was broken and done away with. Youth suicide rates rose from the depths of 0 to 5 per 100,000 to new highs in the 30s and 40s per 100,000 for males and in the high single digits and mid-10s per 100,000 for females. The increase in suicide

rates happened across every Canadian province, with no exception. Although the rates eventually subsided for most provinces for males, they never returned to their pre-increase 'normal'. Females, rather, saw only a momentary lapse in rising rates, and continued to increase into the 2000s. Many provinces such as SKMB, and AB experienced new highs in female youth suicide rates up to and including the final 2015-2019 period. A similar phenomenon was witnessed for SK, AB, MB, and Atlantic Canada males, who are experiencing a resurgence in youth suicide.

The Durkheimian curve is overturned and literally flattened out or inversed among many provinces. The suicide rate was inversed mostly among males but also among females in the provinces of AB, MB, SKMB, and Atlantic Canada. If not for inversed, every province for males and females observed a flattening of the suicide rate curve with rates among youth matching or nearly matching those of older age groups. Importantly, the changes to the Durkheimian curve were not a novel event and persists up to 2015-2019.

The peaks in youth suicide were large and extensive, and they were not transitory. As seen, males in QC had rates for 20- to 24-year-olds above 30 per 100,000 between 1975 and 2004, and SK from 1975 to 2019 (with one insignificant drop below 30 in 2010-2014 at 26.9 per 100,000). Females had continuous growth in youth suicide rates with large increases between 1950 and 2019. Rates for 15-19 females in SK and MB were 12.3 times larger in 2015-2019 than in 1950-1954; rates were 0 per 100,000 in Atlantic Canada in 1950-1954 and 8 per 100,000 in 2015-2019. Except for an outlier data point in BC, suicide for youth was nearly non-existent for females prior to the 1960s across all provinces. It remains necessary to emphasise that suicide among youth was incredibly low, nearly non-existent among some provinces and females. Hence, the eponymous Durkheimian curve that assumed suicide rates as beginning very low among youth and increasing with age.

The emergence of youth suicide as of the 1960s had a preponderance of male suicide. The sex-ratios show males were committing suicide at ratios of at least 4:1 at its height in the 1980s and 1990s. When stratified by age group, ratios were reaching 5:1 and even as high as 7:1 among 15- to 24-year-olds. Considering that the national average for 1950-2019 is 3.71:1, males were over-represented during this period of increased youth suicide.

The sex-ratio subsequently shifted around the 2000s, falling below the 3.71:1 average. Provincial averages across all age groups fell in the low 3:1, with some falling below 3:1. Youth age groups saw sex-ratios falling below 2:1, with some instances among SK and MB seeing an over-mortality of females for 15- to 19-year-olds. In essence, we see a shift in youth suicide rates with an increase among female youth across every province, mirroring the phenomenon among male youth in the 1980s and 1990s.

APC effects were measured using the APC-I model. Estimated aged effects revealed higher concentration of suicides among mid-age adult males and females. Youth age groups for males and females were negative across all provinces, with 20-24 and 25-29 being closer to zero than 15- to 19-year-olds. Period effects revealed above average suicide rates for the periods marking the emergence of youth suicide. Period effects were large and positive as of 1965-1969 and up to the 1990s for roughly both males and females and across every province.

The emergence of youth suicide was accompanied by estimated cohort effects for males and females, across provinces. For males, cohort effects were most pronounced between 1960 and 1974. Each province had some minor variation, with QC males having the strongest and most evident cohort effects. SK and Atlantic Canada had the second most consistent cohort effects among males. The other provinces had strong cohort effects among youth that generally decreased in intensity and neared zero towards the end of their measured lifetime. Although the cohort effects

dwindled over time for most provinces, the results show that entry into adulthood was difficult for many male youth.

Females had cohort effects later in the study period, except for Atlantic Canada. Atlantic Canada had possible cohort effects as early as the 1975-1979 cohort, matching their male equivalent. The others had estimated cohort effects present for cohorts born as of the 1985-1989 cohort, beginning in tandem with the increases seen in the descriptive statistics. Predicted rate plots also allowed the analysis of APC effects among provinces that were not interpretable with the Poisson regression coefficients. In sum, estimated cohort effects were visible for females in all provinces but QC, and especially among Atlantic Canada, SK, MB, and AB.

These results indicate that more importance must be placed on socio-historic factors to study wide-ranging shifts in suicide and its larger implication on how youth enter adulthood. The emergence of youth suicide was measured across all provinces, for males and females. Estimated cohort effects were measured during periods of peak suicide, for all provinces, and males and females. Furthermore, these results emphasise the need to sex-disaggregate data to properly ascertain differences between males and females. Evidently, major socio-historic shifts as of the 1960s and especially in later decades resulted in an excess of suicides predominantly among 15- to 24-year-olds but also across the totality of the population.

Chapter 6: Discussion

The results indicate that the historic increases in youth suicide had long-term impacts that persist to this day. The descriptive statistics show that rates for youth increased in unison across provinces and sex and persist at albeit lower rates than their peaks. Some provinces, such as SK, MB, Atlantic Canada, and AB have seen rates rise into the twenty-first century. Most of the descriptive statistics are novel research and/or have not been presented with such a large scope, nor by province. The APC-I model provides a necessary perspective on the study of youth suicide as having 'long' historical roots and it being part of a larger social context. Period effects impacted the rates of suicide between 1970 and 1990, and cohort effects were felt for males born in the 1960s and 1970s, and females as of the 1990s. All results considered, this sort of quantitative analysis emphasises the need to delve into the symbolic meaning of suicide.

The main findings from the results will be compared to the publications in the literature review. The descriptive statistics fill a lacuna in research on Canadian suicide by providing an unbroken timeline of suicide rates between 1950 and 2019 for each province, male and female, in one place. Further, the descriptive statistics counter the continued practice of sometimes showing preferential treatment for males over females due to male over-mortality. Lastly, the simultaneous increase across all provinces, male and female, of youth suicide rates is testament to the need of a sociological perspective. The APC-I model will also be compared to published works discussed in the literature review. The results on estimated age and period effects generally line-up with existing research, but the results on estimated cohort effects differ significantly, especially for females. The APC model is imperative for drawing larger socio-historic conclusions.

The discussion section will provide some context on the emergence of youth suicide and possible avenues of future research. Beginning first with employment and deindustrialisation, the

discussion will delve into the intersection of gender relations as it pertains to classic Durkheimian understandings of suicide. The literature on Durkheimian approaches to suicide will be complicated with an analysis of classic Durkheimian variables through the lens of gender relations. The discussion section will argue that the variables of marriage, divorce, fertility, family, and employment commonly studied through a Durkheimian lens on suicide best explain male suicide. Lastly, this discussion will cover Indigenous suicide and other possible avenues. Suicide is an incredibly multi-faceted action and no single answer exists. That said, this section will emphasise a sociological approach to the study of suicide.

6.1 Descriptive Statistics

As was detailed in the results, every province experienced an emergence of youth suicide as of the 1960s and the increase in rates was simultaneous across males and females. These findings are not necessarily new but, importantly, they fill a gap in the literature for the provinces of MB, SK, British Columbia, and Atlantic Canada. Unlike QC, with Thibodeau's, Gagné and Dupont, and Légaré and Hamel's publications, the other provinces do not have a comprehensive coverage of easily accessible published suicide data and analysis covering a long period of time. Although some literature was found for Newfoundland and Labrador, it covered only 1981 to 2018; published data on Nova Scotia was found only for 1995-2004; Prince-Edward-Island between 2002 and 2011; and New Brunswick between 1955 and 1983. My results grouped the suicide rates for the Atlantic provinces, but this was necessary to have any data published whatsoever due to the data confidentiality regulations of Statistics Canada.

The same piece-meal coverage was found for ON and AB, with some studies such as Barnes et al. not being sex-disaggregated but still indicating an increase in youth suicide in the 1970s in ON. Solomon and Hellon published rates for 1951-1977 in AB and they too found a similar

emergence of youth suicide for males and females. In sum, no study measures suicide rates per-province and by sex from the twentieth century up to the most recent available data, even if most concur either directly or indirectly that youth rates surged as of the 1960s.

Male and female suicide differed in intensity during the emergence of youth suicide. As detailed in the results, male and female youth suicide for 15- to 24-year-olds rose in unison, although at different levels. Following the emergence of youth suicide, and maintaining provincial trends, rates generally fell for males at the turn of the century while rates for females increased. There are some exceptions among males for SK, MB, AB, and Atlantic Canada, but their rates in the 2000s are still below the rates registered during the emergence of youth suicide. As for females, rates for youth increased across all provinces, with many peaking during the 2000s. Importantly, this highlights how a shift has occurred between the sexes with rates for females being impervious to the deceleration in rates experienced among males. This is best exemplified in the changes to the sex-ratio as of the 2000s.

The sex-ratios presented in the results concur with existing literature that suicide rates among females across Canada and especially in MB and SK have increased rapidly as of the 2010s. Kirmayer, and Skinner and McFaull found that rates for females across Canada aged 10-19 between 1980 and 2008 had the highest positive average annual percent change. Further, this thesis confirms the over-mortality of males during the emergence of youth suicide as seen in the sex-ratios during these periods. What this thesis adds is differences between provinces and most importantly, a larger period of study that shows how female youth suicide rates were nearly non-existent prior to the 1970s but nearing the suicide rates of their male counterparts as of the 1990s and into the 2000s.

The emergence of male and female youth suicide across all provinces is testament to social forces impacting suicide rates. It would be folly to argue that mental health disorders became lethal among youth across Canada as of the 1960s. Further, it would do a disservice to the youth that died during this period to interpret their deaths solely through a psychocentric lens. Clearly, structural changes as of the 1960s impacted how youth conceptualise their future and existence. More importantly, this signifies that youth suicide as we know it was not 'normal' approximately 60 years ago. Rates were very low for males and females prior to the 1960s. A sociological lens is necessary to understand why youth started committing suicide at alarming rates, and the following sections will provide a starting point.

6.2 Age, Period, and Cohort

The results from the APC-I model fill a gap in the literature by providing statistics for provinces that were never measured. This point is crucial, as recent comparable studies are lacking. Further, it updates the results for the provinces of QC, ON, and AB with recent data. The latter highlights areas of concurrence and reinforces the results of previous literature while also pointing to important differences. Firstly, age and period main effects generally reflect existing findings. Secondly, the results do not align with the cohort analysis proposed by Légaré and Hamel, and Thibodeau. Lastly, the APC model allows for a socio-historic lens on suicide. Whereas the descriptive statistics asserts that the period of youth was a fraught during the second half of the twentieth century, the APC-I model allows us to argue that the social pressures faced in youth may have had lasting effects as they aged.

6.2.1 Age and Period Effects

Age and period main effects in the APC-I model concur with existing literature. The results show that middle-age adult groups were most at-risk throughout the entirety of the study period

and for all provinces. Males and females across all provinces had a concentration of suicides between the ages of 40 and 64 that persisted throughout the emergence of youth suicide. Although this may imply a contradiction in the results, this is a limitation in the APC model. The APC model cannot measure age effects by period – rather, it measures the most consistent age group throughout the entirety of the period. This will be further covered below in the limitations. Estimated period effects are measured across all provinces for males and females during the peak periods of youth suicide. The periods of 1970 up to the 1990s had higher-than-average suicides for males, with similar results among females – a caveat being that some provinces for males and females had period effects extend into the 2000s.

The results on age and period effects concur with Thibodeau, and Légaré and Hamel's findings. Both publications found that age effects exist for middle-age adult groups among QC males and females. Although, Légaré and Hamel only provided a graphical analysis of age effects with no statistical analysis. These results also concur with older publications of Reed et al., and Trovato. Other research on suicide such as Mao et al. found that age effects are also more pronounced on mid-age adult groups, and even among age groups above 65.[306] Although the results did not necessarily place much emphasis on older age groups, estimated age effects for age groups above 65 were relatively muted across all provinces. Thus, finding differing results to Mao et al.

Estimated period effects measured herein also reflect existing literature. Mao et al. measured fulgurant increases among 15-19 and 20-49 males and females between 1951 and 1981, across Canada.[307] Some differences arise with the findings of Thibodeau, and Légaré and Hamel. The latter publication was slightly lacking in detail when describing the beginning and end of their

[306] Yang Mao et al., "Suicide in Canada: An Epidemiological Assessment," *Canadian Journal of Public Health / Revue Canadienne de Sante'e Publique* 81, no. 4 (1990): 324–28.
[307] Ibid., 325.

period effects and offered no analysis of female period effects. Their graphical analysis indicated that suicide rates increased between 1950 and 1970 in QC, with a peak in 1995-1999, but only among males.[308] The results from the APC-I model states otherwise. Estimated period effects are measured for females in QC as of the 1970s and persists into the most recent period. Though, the peak in 1995-1999 for males matches the estimated period effects measured in the APC-I model.

Thibodeau found period effects increasing for males in QC as of 1945-1950 and females as of 1961-1965, with both peaking in 1981-1985.[309] As mentioned above, the APC-I model found estimated period effects beginning slightly after what Thibodeau states. The same is seen for males, with period effects beginning as of 1980-1984 and maintaining strength till 2010-2014 (like their female counterparts who extend up to 2015-2019). These differences are likely due to the periods studied (Thibodeau covers suicide rates as of 1926) and the use of a different model.

6.2.2 Cohort Effects

Cohort effects follow a similar comparison. Légaré and Hamel argued that cohort effects exist for males born between 1950 and 1979, and for females born between 1980 and 1989. They report that the cohort effects were stronger for males and were "more modest" for females, and they refer to previous studies that found a progressively stronger cohort effect as of World War II.[310] Thibodeau draws almost the same conclusion, reporting a similar cohort effect for males born between 1946 and 1979, and females born between 1981 and 1985, while referencing similar studies as Légaré and Hamel for a more global pattern.

[308] Légaré and Hamel, "An Age-Period-Cohort Approach to Analyzing Trends in Suicide in Quebec Between 1950 and 2009," 122.
[309] Thibodeau, "Suicide Mortality in Canada and Quebec, 1926-2008: An Age-Period-Cohort Analysis," 12.
[310] Légaré and Hamel, "An Age-Period-Cohort Approach to Analyzing Trends in Suicide in Quebec Between 1950 and 2009," 122.

The divergence with Légaré and Hamel, and Thibodeau stems primarily from a methodological and conceptual difference. Both publications measure the cohorts as a single coefficient indicating the direction (positive, neutral, or negative) and strength (deviation from zero) of a cohort's suicide rate throughout its lifetime. This means that the measurement they use reflects the average deviation from other cohorts over their entire lifetime but offers no insight into the cohort's life-course dynamics. Therefore, and in direct opposition with the APC-I model, the methods they use are unable to statistically verify if the deviation of a cohort is steady, increasing, or decreasing. Crucially, the APC-I model would provide similar results to Thibodeau, Légaré and Hamel if it were not for the ability to test a cohorts life course dynamic.

The APC-I model indicates that very few male cohorts exhibit estimated cohort effects over their life-course. While Légaré and Hamel, and Thibodeau identified cohort effects among almost the same male cohorts, the results here show such effects for fewer cohorts: Québec (1960-1974 cohorts), Saskatchewan (1965-1969 cohort), and Atlantic Canada (weaker effects for 1970-1974). The cohorts that Légaré, Hamel, and Thibodeau found significant positive inter-cohort deviations in the APC-I model – a conceptually comparable coefficient to Légaré and Hamel, and Thibodeau. It means that the cohort had higher-than-average suicides compared to other cohorts over their entire lifetime. This coefficient can but should not be used to argue that cohort effects exist as it does not indicate the life-course dynamic of a cohort which were all significantly negative (see Table 17).

The strong, significant inter-cohort deviations primarily stem from higher-than-average age-by-period interaction terms among 15- to 24-year-olds (appendix Tables 34-47), which weaken as the cohorts age. This indicates that most suicide rates in these groups cannot be attributed to cohort effects but only to the youth age groups of 15 to 24. The cohort effect alleged by Thibodeau and

Légaré and Hamel is the result of the emergence of youth suicide, but it did not result in a consistent cohort effect. Only a few specific cohorts among QC, SK, and Atlantic Canada had estimated cohort effects that persisted throughout their lifetime.

Likely explanations for the Baby Boomer cohorts of the 1950s and early 1960s can be found in the literature presented on cohort sizes by Pampel and Williamson, and Thibodeau and Lachaud. The youth cohort effects for those born between 1950 and 1964 can be symptomatic of being a larger cohort in size. The cohort effect subsequently dies out in early adulthood as Baby Boomers acquired greater social capital, wealth, and political power as a voting bloc. Generation X, on the other hand, were faced with less social capital, major changes to social institutions, and came of age during a period of higher unemployment and dominated by a larger Baby Boomer cohort that persists to this day. Of course, more analysis is necessary, but the periods and studies align.

The same criticism stands for females. The results from the APC-I indicate that no estimated cohort effects exist for females in QC, in contrast to Légaré and Hamel, and Thibodeau. Although the inter-cohort deviation and intra-cohort slope are impacted by zero-values for QC females, the predicted rate figure comparing the APC-I model versus the AP model (Appendix Figure 76) shows that the cohort effect among females in QC was among 15- to 24-year-olds. The estimated cohort effects for the 1980-1989 cohorts flattened out and became negative as they aged. Further, the predicted rate graphs comparing age main effects against the APC-I model (Appendix Figure 83) indicate that period effects best explain any deviation in those periods, with some minor cohort effects among 15-24. Like their male counterparts, a reliance on the cohort's lifetime deviation is not a measure of lifetime cohort adherence.

Unlike their male analogue, females had estimated cohort effects in every province except QC and Atlantic Canada. BC and ON were the only provinces for females with interpretable inter-

cohort deviations and intra-cohort slopes. Both provinces had estimated cohort effects for cohorts born in the 1990s (and as of 1985-1989 for ON) that persisted throughout their lifetime. SK and MB had possible cohort effects for cohorts born as of 1985-1989, according to the predicted rate plots; AB had possible cohort effects as of the 1990-1994 cohort (see Appendix Figures 71-73 and Figures 78-80).

All the results on estimated APC effects from provinces other than QC are novel and offer valuable insights into suicide trends among males and females. The APC-I model provides necessary nuance to the conceptualisation of measuring cohort effects over the cohort's lifetime rather than relying on the overall strength of a cohort. The results indicate that greater emphasis must be placed on female cohorts born as of 1985-1989. These cohorts across Canada have estimated cohort effects that persist up to 2015-2019 and maintain higher-than-average suicide rates since their inception.

Any discussion stemming from the APC-I model must also consider the differences between male and female birth cohorts. Whereas estimated cohort effects for males are measured in the 1960s and 1970s, female cohort effects are found to begin as of the late 1980s. Thibodeau argues that social change as of the 1950s must have impacted males more than females and resulted in cohort effects among males and not females[311] But, this does not help in explaining female cohort effects. Although this may be true for cohorts born in the 1960s and early 1970s, the same is not true for period effects. Males and females across provinces had relatively similar period effects. Thus, increases in suicide during the second half of the twentieth century likely came from similar social forces but had differing lifetime impacts on males and females. Further, the difference

[311] Thibodeau, "Suicide Mortality in Canada and Quebec, 1926-2008: An Age-Period-Cohort Analysis," 14.

between cohort and period effects implies that socio-historic events were particularly impactful on the formative years of youth.

These results challenge the paradigmatic suicidologists with a focus on psy-related factors and risk assessments. Simply put, did mental disorders in male and female youth suddenly become lethal as of the 1960s across every province? Does the same apply to a cohort – can a specific cohort of people be more susceptible to mental disorders and by extension, suicide? Social factors will be discussed below, beginning with deindustrialisation.

Periods of major change are often perceived as causing instability on integration/regulation. An increase in suicides can be seen as reflecting socio-historic events and symbolising periods of instability. A possible avenue of research will be briefly detailed below, as impacting every province in Canada. Deindustrialisation through the lens of Capitalism transcends boundaries and reveals connections to family composition, employment, youth and coming-of-age, local geography, and gender relations surrounding marriage, divorce, birth rates, and more. The following section is by no means exhaustive, more pointed research is necessary to understand the interplay of social forces on suicide rates.

6.3 Employment and Deindustrialisation

Recent government reports on Canadian suicide do not provide a 'long' historical perspective for youth suicide. The report on *Self-Harm and Suicide in First Nations Communities in Saskatchewan* published by the Saskatchewan Health Quality Council covers only a two-decade period. Other municipal, provincial, or federal reports such as "Suicide Prevention in Toronto" cover the first decade of the twenty-first century; the "The National Suicide Prevention Action Plan 2024-2027" reports Canadian suicide rates for 2020 and refers to a study on Indigenous suicide for 2011-2016, although they do briefly cover the historical roots of Indigenous suicide;

or, mentioned above, "Manitoba's Changing Face of Suicide and the Narrow Window for Intervention" covers only 2009 to 2013.[312] In sum, the data are often a reflection of the context provided and representative of their focus on the present and future with no regard for the history of suicide in Canada. Although their results are pertinent, they do not represent the amplitude of change between pre- and post-emergence of youth suicide. Further, it elides foundational factors to their present-day symptoms.

Grell's bibliography detailed in the literature review corresponds with the results and supplies an image of suicide as representative of major changes in the Canadian suicide regime and a break in how youth conceptualised their future. Grell premises the monograph *Adolescence et suicide* in the context of a before/after picture of youth suicide. Crucially, Grell must remind the reader that "*Il faut se souvenir qu'avant les années 70*" youth suicide was a rare occurrence.[313] It is this reminder that amplifies the need to provide statistics that date before the rise in youth suicide. Without this foundation, Grell would have been unable to situate the 35 interviewed youth (out of an initial pool of 279) in a long history that details the major changes for youth in Acadia, New Brunswick.

These changes are found to be the product of shifts in how youth navigate their life into adulthood. The interviews help shape a narrative that underlines the lived experiences of these youth within a context of rapid and uncertain social change. The interviewees live in a context of economic periphery where social safety measures such as changes to welfare and deindustrialisation have ravaged the employment landscape, and substance use and reckless

[312] Ashleigh Dalton et al., "Suicide Prevention in Toronto" (Toronto, Ontario: Toronto Public Health, November 2014); Public Health Agency of Canada, "The National Suicide Prevention Action Plan 2024-2027: Working Together on Life Promotion and Suicide Prevention" (Ottawa, Ontario: Government of Canada, June 2024); Manitoba Office of the Children's Advocate, "Manitoba's Changing Face of Suicide and the Narrow Window for Intervention" (Winnipeg, Manitoba: Manitoba Office of the Children's Advocate, 2015).
[313] Grell, *Adolescence et suicide*," 7.

actions are seen as conscious and logical. Youth are thrown into adulthood where futures are uncertain and hazardous, and not reflective of prior traditional norms. The normal is banalised and it effectively no longer exists, it is no longer easily attainable according to Grell.

Major changes to employment took place in Canada during the twentieth century. Cyclical patterns of modernisation and deindustrialisation in Canada deeply affected and continue to affect the lived realities of people living in Canada. What was covered above for Québec by Dagenais and Acadia by Grell was also a national phenomenon. Modernisation and deindustrialisation was not only shifts in politics and society, but it also impacted employment, the family, social relations, and how people conceptualise their self in relation to outside forces. Therefore, changes to the suicide regime are indicative of social forces brought on by shifts in major institutions.

The twentieth century was marked by deindustrialisation across Canada. Deindustrialisation is not just an economic process of closing mines, mills, and factories, it is also the wider socioeconomic, political, and cultural processes that are *unfinished*.[314] Further, it is a process that is globalised in scale. Industrial towns or neighbourhoods are intrinsically linked to globalised financial markets and to the global system of resource extraction.[315] Their inception and the severity of the collapse are intimately tied but not mutually exclusive to how close they are to economic centers.

The capitalist boom and bust cycle is a common feature to deindustrialisation. Deindustrialised areas are sometimes referred to as "storm centres" and characterised with similar metaphors as exhibiting moments of capitalist accumulation akin to "whirlwind ferocity" and

[314] Lachlan MacKinnon and Steven High, "Deindustrialization in Canada: New Perspectives," *Labour / Le Travail* 91 (May 25, 2023), 13.
[315] Ibid., 25.

"ferocious" declines, often referred to as "cyclonic" (cyclone).[316] The cyclonic effect of capitalist resource extraction in remote areas as well as in cities extends within and beyond political economies by dramatically transforming social relations, landscapes, and the environment.[317] Not all regions are affected similarly and must be analysed within their socio-historical contexts. That said, the uneven development in Canada had "resource peripheries remain in a state of social and economic underdevelopment while benefits flow to metropolitan regions."[318]

The timeline for deindustrialisation is uneven across the Canadian provinces albeit within neighbouring decades during the twentieth century.[319] For example, British Columbia's boiler and engine industry declined in the early twentieth century while large parts of Atlantic Canada deindustrialised in the 1920s and 1930s, with continued swings in the 1970s and 1980s.[320] Or, southern Ontario saw a shift in its industries in the 1950s when Ford moved its automotive operations to Oakville.[321] Alberta experienced similar cycles with its ties to oil and natural gas with growth between 1971 and 1981, and 1996 and 2006, and a recession during the interim period and a big drop in oil prices between 2014 and 2015.[322] Fisheries in Newfoundland and Labrador suffered from the moratorium in 1992, as mentioned above. Montréal and surrounding areas lost textile plants and heavy industries.[323] Saskatchewan lost the mining town of Uranium City in the 1960s and suffered from oil and natural gas vacillations, like Alberta.[324] Not to mention the

[316] Arn Keeling, "'Born in an Atomic Test Tube': Landscapes of Cyclonic Development at Uranium City, Saskatchewan," *Canadian Geographies / Géographies Canadiennes* 54, no. 2 (2010), 230.
[317] Ibid.
[318] Ibid.
[319] MacKinnon and High, "Deindustrialization in Canada," 16.
[320] Ibid.
[321] Ibid.
[322] Rosina Mete, "Examination of the Geographic Parameters of Suicide: A Historical Comparison Study of Ontario and Alberta," *International Journal of Psychiatry Research* 5, no. 3 (June 30, 2022), 3.
[323] MacKinnon and High, "Deindustrialization in Canada," 18-19.
[324] Keeling, "'Born in an atomic test tube'," 229.

globalisation of the economy and subsequent expropriation of manufacturing jobs overseas. These are all notable examples but are certainly not an exhaustive list.

Outside influences were constantly at play in the deindustrialisation process in Canada. The Maritimes (New Brunswick, Nova Scotia, and Prince Edward Island) saw waves of deindustrialisation beginning in the late nineteenth century with wood shipbuilding that were a product of colonial powers shifting to steam and steel.[325] Heavy industries were next from the 1920s onwards up to the 1990s and beyond.[326] A multiplicity of factors were at cause: lacking the capital of competitors in Québec or Ontario; financiers and merchants exporting their capital rather than reinvesting in the Maritimes; and, shifting federal policies.[327] Heavy industries in the Maritimes, notably coal and steel saw a slow decline and closures as of the 1970s with most disappearing into the early 2000s, in tandem with many of the manufactures that were intended to replace them.[328] Consequently, impacting the renewal efforts after the disappearance of heavy industries. Further, exemplifying the impacts of outside powers and investors on local economies, environments, and social relations.

Deindustrialisation can be perceived as a "slow structural violence".[329] Industrial ruination is a lived process where social forces, sometimes from outside, impacted the lived experience of workers and residents in real terms.[330] There is a physicality and embodiment to the process, it begins with factories closing that are then followed by stores, restaurants, bars, schools, and churches. Public services are slowly reduced, and governments are more likely to tolerate higher

[325] Jane H. Reid and John G. Reid, "The Multiple Deindustrializations of Canada's Maritime Provinces and the Evaluation of Heritage-Related Urban Regeneration," *London Journal of Canadian Studies* 31, no. 1 (September 1, 2016), 91.
[326] Ibid., 90-91.
[327] Ibid., 94-95.
[328] Ibid., 97.
[329] MacKinnon and High, "Deindustrialization in Canada," 18; Alice Mah, *Industrial Ruination, Community, and Place: Landscapes and Legacies of Urban Decline* (Toronto: University of Toronto Press, 2012), 201.
[330] Ibid., 201.

levels of unemployment. In addition, people in economic peripheries have fewer alternatives and are sometimes forgotten. Echoing the works of Grell and Dagenais and the impact of unemployment on suicide. More importantly, it affects how youth perceive their position in society and within the timeline of their existence.

People's historical timelines are sometimes shaped by the industries that dominate their cities and in which they work in. They create a link of continuity with the past that is determined by the destruction and creation of the industrial legacies that are "fraught, contradictory, and uncertain".[331] Deindustrialisation is not just a historical record but a legacy that people wrestle with that impacts their lived realities.[332] In addition, the landscapes of deindustrialisation are still home to many and harbour strong attachments to the industrial past.[333] We see this in Dagenais' work in Abitibi-Témiscamingue, and also with how industrial employment has ties to (masculine) identity. To a degree, Michael J. Chandler et al's work covered below on the cultural continuity of Indigenous history has some comparison. Youth living within a context of deindustrialisation find themselves lost in their identity formation and can, sometimes, face severe uncertainty in the face of precarity and changing social institutions.

Rural heavy industries are archetypical for conceptualising employment as linear time. Essentially, how achievements are measured over time as an investment that is predictable.[334] Children would work the same job or similar as their parents, maintaining stability as mentioned by Dagenais above. Deindustrialisation has and continues to alter this vision, impacting identities in precarious economic peripheries.

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[331] Mah, *Industrial Ruination, Community, and Place,* 201.
[332] Ibid.
[333] Ibid., 201-202.
[334] Richard Sennett, *The Corrosion of Character: The Personal Consequences of Work in the New Capitalism*, 1. publ. as a Norton paperback (New York, NY: Norton, 1999), 13.

This linearity was also found in urban settings. Richard Sennett detailed in the monograph *The Corrosion of Character* that old modes of employee loyalty and trust were dismantled in favour of flexibility and networks.[335] The ethos of "no long term" pervades and corrupts. Sennett argues that the short-term, no commitment, no ethics spirit is impossible to transpose on family life and child-parent relationships – the family is no longer a place of respite.[336] Which is itself applicable to the cyclonic patterns of heavy industry that settle and leave without consideration for the local population.

As Sennett and Mark Fisher point out, these changes were brought upon by the worker themselves in the second half of the twentieth century, around the same time as the emergence of youth suicide. Fisher writes, these workers were "liberated from a bondage to which they have no wish to return but also abandoned, […] confused about the way forward."[337] Workers did not wish to work in a factory for decades, but the new reality has left them worse off and stranded. Fisher argues that British youth suffer now from "hedonic depression".[338] In other words, the belief in social mobility through consistent hard work, once plausible under previous employment structures, was then and is now increasingly unstable.[339] Reasons abound but the rise of the gig economy, decline of unions, corporate welfare, and globalisation are mostly to blame.[340] In sum, deindustrialisation is a symptom and cause of this shift, and a catalyst to major changes in how youth conceptualise their future.

André Tremblay shows how the multitude of these factors intersect in "*Suicide, migration et rapports sociaux de sexe*", positioning deindustrialisation within an analysis of Québec suicide as

[335] Ibid., 19.
[336] Ibid., 22.
[337] Fisher, *Capitalist Realism,* 35.
[338] Ibid, 36.
[339] Ibid.
[340] Ibid.

of the late 1970s. Tremblay found that suicide rates were highest among men (all age groups) in industrial regions outside major cities such as Montréal, Québec, or Laval.[341] Generally, industrial labour far from economic centers became precarious and uncertain as of the second half of the twentieth century, with service-sector employment gaining ¾ of the market share by 1996 and the lion's share of economic growth and production.[342] Effectively, concurring with the notion that the linearity of time in industrial labour was, to put it lightly, altered.

Industrial labour also became a shadow of its former entry-level economic enrichment, becoming technical with higher education standards and with increased precarity.[343] Men with lower levels of education were over-represented in industrial areas with high suicide rates.[344] This also extended to higher suicide rates in industrial areas that had lower levels of female labour participation, and greater revenue disparities between men and women.[345] These were areas where men dominated the labour market, with women filling in lower-paying positions, if available. Further, this echoes the rigidity of traditional masculinity in relation to employment in the face of shifting social standards.

Women were more mobile and were better able to adapt to changes in the social fabric. Whereas men were often stuck to old habits, women were more likely to leave industrial regions that were inhospitable to them after a separation/divorce in search of higher education in metropolitan areas.[346] Shifts in employment and changes to the traditional family had an impact on how men perceived their future in economic peripheries. Men were less likely to adapt their progressively precarious positions. High males suicide rates in industrial regions such as Abitibi

[341] André Tremblay, "Suicide, migration et rapports sociaux de sexe," *Recherches sociographiques* 48, no. 3 (2007), 79.
[342] Ibid., 78.
[343] Ibid., 88.
[344] Ibid.
[345] Ibid., 88-89.
[346] Ibid., 88.

had the biggest gaps between male and female educational attainment.[347] In effect, women were better able to project themselves into the future through education by moving towards service-economy centers.[348] This suggests that traditional values surrounding family and employment were most deeply ingrained in males, and left them with fewer options once they became more difficult to access.

Reneging a long history for suicide fails to understand the impact of the transformation in labour on suicide rates during the twentieth century. The deindustrialisation of Canada fits neatly in Durkheim's model of anomie. Rapid economic and social shifts impacted rates of suicides, and we have seen how employment can impact identity directly and indirectly through altering the social and physical landscape of individuals. Deindustrialisation also finds theoretical underpinning in egoistic suicide. The breakdown of regulation previously found in the family individualises the burden of existence, with neoliberal governments tightening social safety nets through austerity measures. That said, it is important to note that the relation is not one of direct causation. Suicide is a multi-faceted action that is often not one of impulse but rather a locus of actions, moments, and experiences that are interconnected and complex.

Loss of employment does not immediately equate to suicide. Rather, it is the compounding effects of job loss and subsequent difficulties and experiences one may face in finding employment or in shaping the identity and environs of an individual that *may* lead to suicide, for some. Further, the effects of (sometimes sudden) deindustrialisation without the necessary replacements impacts how youth conceptualise their future in precarity. This is especially concerning in single- or limited-industry zones such as rural areas or economic peripheries such as Acadia. It may affect

[347] Ibid., 89.
[348] Ibid., 93.

the rituals of entering adulthood and of finding employment that provides stability necessary to live.

6.4 Gender and Sex

The Durkheimian model that understands suicide risk as a dual process between family and employment is attuned to how men navigate the domestic and public spheres. The fact that women, historically, have (and continue to have) lower levels of income, prestige, power, and equity seems at odds with their lower rates of suicide compared to men. Low suicide rates also do not signify a greater well-being within these circumstances. This calls back to the Gender Paradox in suicide studies and puts into question the current conceptualisation of social forces impacting suicide rates.

This section will cover the intersection of gender relations, studies related to the Durkheimian interpretations of (male) suicide, and how the introduction of women in the public sphere disrupted how male youth perceive their future employment and life achievements in an already disrupted social structure. Much of the literature focuses on social forces that impacted the family, employment, marriage, divorce, and fertility, yet these variables rarely *truly* consider gender relations and the hegemony of men within these spheres. Rather, the shifts in family, employment, marriage, divorce, and fertility were a direct affront to how male youth perceive their future with changes to gender relations. In effect, it is all inter-related.

Krull and Trovato argue that women and men have different forms of collective ties and different sources of integration/regulation.[349] Their focus is on QC and the Quiet Revolution, where traditions and religious values gave way to individualism.[350] These changes happened across Canada but happened a bit later in QC.[351] In no uncertain terms, they argue that "These social

[349] Krull and Trovato, "The Quiet Revolution and the Sex Differential in Quebec's Suicide Rates," 1127.
[350] Ibid., 1124.
[351] Ibid., 1125.

changes are linked to the suicide problem in contemporary Quebec."[352] The question though is, for whom are these social changes problematic? Although major shifts in religion, employment, marriage, divorce, and fertility were taking place, they tended to affect men due to their affinity for traditional modes of being. Women in industrial regions, as seen above, were more likely to adopt individualistic identity traits by migrating to new opportunities. We see this in how rates of suicide rose aggressively for males and also in how these variables do not necessarily correlate with female suicide. As mentioned above, a study on QC between 1931 and 1986 by Krull and Trovato found that out of divorce, "no religion", unemployment, and childlessness, only divorce had an impact on female suicide rates. Although most authors have not picked up on it, there is a gendered component to how male youth perceive their future in the face of changes to fundamental pillars of identity.

The family was largely believed to 'protect' men from the anomic qualities of labour and maintain suicides rates for women low, according to Durkheim.[353] Yet, modernity and growing individualism tore at the roots of the traditional family. The spread of women in the workforce as of the early 1960s disrupted the status-quo in the public sphere and affected the protective qualities afforded to men and women in the family.[354] But, these social changes and calls for equality/equity did not result in the emancipation of women from the domestic sphere, nor the full integration of women in the labour force. Women continue(d) to bear the domestic burden while working lower-paid and -status positions (though less so than before), which kept them entrenched in traditional family roles and 'safe' from the anomie experienced by men in paid employment.

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[352] Ibid., 1124.
[353] Fred C. Pampel, "National Context, Social Change, and Sex Differences in Suicide Rates," *American Sociological Review* 63, no. 5 (1998), 745.
[354] Frank Trovato and Rita Vos, "Married Female Labor Force Participation and Suicide in Canada, 1971 and 1981," *Sociological Forum* 7, no. 4 (1992), 661.

Essentially, women entered the workforce but were still tied to their place in the domestic sphere. David J. Maume argued that women continued to adhere to traditional family roles even though they had entered the labour market.[355] Maume measured for the year 1992 in the US that even with higher prestige positions, women with professional or managerial occupations continued to adapt their work efforts to the needs of their families.[356] Therefore, strong ties to the family may have protected women from the anomie experienced by men in the labour force as initially theorised by Durkheim. Further, women entering the labour market disrupted the male-dominated workplace, impacting multiple aspects of how men identify in the public sphere and in relation to the family as 'bread-winners'.

Changes to domestic duties and employment have remained distinctly gendered. Occupations available to woman tend to be more flexible and pay less than typical jobs for men, which incentivises women to relinquish employment for domestic life.[357] Criado-Perez found that women made up 75% of part-time workers in the UK in 2016, and globally, 75% of unpaid work is done by women.[358] Criado-Perez writes that it is a "choice-that-isn't-a-choice", low-paid work tends to choose women rather than the other way around allowing women more flexibility for family duties, for less pay.[359] Further, even in higher-paid more prestigious occupations, a 2010 US study found that between male and female scientists, females did most of the cooking, cleaning, and parental labour.[360] According to official Statistics Canada seasonally adjusted data, as of February 2025, 12.04% of men 15 years of age and over held a part-time employment, compared

[355] Maume, "Gender Differences in Restricting Work Efforts," 866.
[356] Ibid.
[357] Criado-Perez, *Invisible Women*, 75-77.
[358] Ibid., 70 & 75.
[359] Ibid., 76.
[360] Ibid., 72.

to 22.68% of women part of the same group.[361] According to annual Statistics Canada data for 2024, 11.3% of women aged 15 and over holding part-time employment did so to care for their children, compared to 1.33% for men of the same group.[362] Lastly, of those in part-time employment actively looking for full-time employment, 54.7% were women.[363] Clearly, domestic labour and employment is still gendered in in Canada and generally in Western countries.

An argument can be made that the persistence of traditional family structures and employment standards may have 'protected' women and kept their suicide rates lower than men. To cement this statement, Pampel found that a curvilinear pattern exists between women entering the labour force and their suicide trends in the 1980s and 1990s, that equated with a major demographic shock that momentarily narrowed the suicide gap between men and women.[364] Though, subsequently, the male-to-female suicide ratio returned to normal, indicating that the demographic shock was short-lived.[365]

Krull and Trovato found similar results with a positive correlation between QC female married labour force participation and male and female suicide rates in 1971.[366] By 1981, the correlation was negative, meaning that there was an initial shock that was later not significant. Further, this same pattern was measured across all of Canada by Frank Trovato and Rita Vos, but once more, only for married women.[367]

The results found herein agree with the above literature though some nuance among the provinces is required. All provinces except SK, MB, and Atlantic Canada (but mostly among

[361] Statistics Canada (2025). Table 14-10-0287-03 Labour force characteristics by province, monthly, seasonally adjusted. DOI: https://doi.org/10.25318/1410028701-eng
[362] Statistics Canada (2025). Table 14-10-0029-01 Part-time employment by reason, annual (x 1,000). DOI: https://doi.org/10.25318/1410002901-eng
[363] Ibid.
[364] Wray et al., "The Sociology of Suicide," 513-514.
[365] Ibid.
[366] Krull and Trovato, "The Quiet Revolution and the Sex Differential in Quebec's Suicide Rates," 1141.
[367] Trovato and Vos, "Married Female Labor Force Participation and Suicide in Canada, 1971 and 1981," 661.

youth) have seen decreases among female suicide since the emergence of youth suicide. ON and BC have witnessed measurable declines in suicide rates across all age groups since the 1980s, and AB and QC as of the 2000s. The same cannot be said for males of the same provinces who maintain, at minimum, rates above 10 per 100,000. SK, MB, and Atlantic Canada are outliers among the provinces, with more detail on the former two in the following section on Indigenous suicide. In sum, this study measured the simultaneous increase in female and male suicide rates, followed by a subsequent decline among males. These findings align with the existing literature while providing additional insight into which provinces experienced this trend.

A possible connection here is made between women entering the labour force as of the 1960s and male youth suicide. As mentioned, Pampel and Williamson found a correlation between changes to the family (i.e. fewer marriages and increased divorce) and increases in youth suicide for males. Entrance into adulthood became increasingly fraught and complex, with a reduction in "social capital".[368] It is implicitly assumed that the "Young adults […] facing the insecurity of their occupational and financial future" are males and the loss in social capital is likely linked to the introduction of women in a workplace dominated by men, in tandem with the erosion of stable employment prospects.[369]

Using Pampel and Williamson's argument that members of larger cohorts "face competition for increasingly scarce resources that harms their education, occupational opportunities, and financial well-being", I argue that the introduction of women in the labour force likely impacted how males perceived their future opportunities, even if women were mostly occupying lower-paid and -prestige positions.[370] How males perceived their position in society shifted dramatically, in

[368] Pampel and Williamson, "Age Patterns of Suicide and Homicide Mortality Rates in High-Income Nations," 254.
[369] Ibid., 254.
[370] Ibid.

conjunction with other disruptions to the hegemony of men in the family, marriage, divorce, fertility, and religion, and the stability these institutions provided.

QC is a great example of these changes with the secular turn beginning during the Quiet Revolution that dramatically changed the lived experience of youth. Increasing individualism brought on by modernity (read: Capitalism) led to a sharp decline in marriage and fertility, an increase in divorce and average age of first marriage, and an increase in female labour force participation.[371] Krull and Trovato found that the collapse of traditional factors of integration/regulation increased individualism with the disruption of socio-economic conditions.[372] The alleged emancipation of women into the labour market disrupted the dominance of men in the public sphere and how men perceived their place in public life. Further, the increase in divorce and reduction in marriage destabilised typical milestones for youth and provided alternatives for women outside of the domestic sphere without the need to marry.

The estimated cohort effects found for males in QC, SK, and Atlantic Canada line up with this timeline. The cohort effects that are felt across the cohort's lifetime are found within the 1960 to 1974 cohorts. Further, all other provinces still had strong inter-cohort deviations for these cohorts, meaning that they had higher-than-average suicide rates compared to previous cohorts. In simpler terms, the higher-than-average suicide rates were due to the disproportionately high suicide rates among 15- to 29-year-olds – male youth and young adults born during the 1960s and 1970s and the period of increased female labour force activity and shifting gender relations.

These male cohorts were born during a period of social change brought on by Capitalistic shifts towards individualism and away from traditional integration/regulation values. Although a reduction in traditional integration/regulation can be the cause of the emergence of male youth

[371] Krull and Trovato, "The Quiet Revolution and the Sex Differential in Quebec's Suicide Rates," 1125.
[372] Ibid., 1125.

suicide the terminology is almost too innocent, implying that what was previously good for men was also good for women. Rather, the fulgurant increase in youth suicide among males (but also among females) is likely also due to the distortion in how men perceived their position in society with the introduction of women in the public sphere. Further, this disruption of the hegemony of men occurred in tandem with the deindustrialisation of jobs commonly worked by men.

The introduction of women in the labour force likely led to an increase in female suicide rates as of the 1960s and into the 1970s but was not a sudden enough shift to lead to cohort effects. Their presence within the realm of employment was possibly sufficiently alleviated due to their continued presence within the domestic sphere and through the emancipatory spirit of gaining a form of independence from the domestic sphere. As mentioned, females and moreso women in heterosexual relationships with children were "protected" by the family institution due to their continued predominance with child-rearing and parenting, regardless of the number of children they birth (reduction in fertility rates), being employed, or even being single (marriage). Divorce had an effect according to Krull and Trovato, but this was more likely due to women losing the primary earner in their household[373] as women had lower-paying positions, likely working part-time jobs.

There is a difficulty in explaining why female suicide cohorts began forming as of the 1990s across Canada. Preliminary hypotheses can maybe look at possible causes related to the disillusionment of neoliberal capitalism that promised greater gender equity in the public and domestic sphere. There is also the possibility that female youth were initially 'protected' during the emergence of youth suicide as they acquired greater emancipation into the labour force during the 1960s and 1970s. Following these youth cohorts of the 1960s and 1970s, these newfound

[373] Krull and Trovato, "The Quiet Revolution and the Sex Differential in Quebec's Suicide Rates," 1142.

liberties and freedoms were no longer novel. Little had changed in terms of gendered labour in the domestic sphere and employment was mostly found in the lower rungs of the economy, not to mention a lack of political advancements and clout.

One can hypothesise that men attempted to hold on to traditional values for far longer than women, as it relates to men attaching themselves to obsolete masculinities, or that men were more likely to remain in ruinous industrial regions while women sought education opportunities elsewhere. Links to this can be found in notions of hegemonic masculinities, where men may not have wanted to relinquish areas of known power relations that were quickly disappearing. Simultaneously, women were doing away with traditional values in favour of new liberties and independence. That said, this is definitely an area that will require further research.

The majority of the research on Durkheimian causes for women are found in the realm of the family, marriage, divorce, fertility, and employment. What about women who are not married/in a couple, in non-normative relationships, with no children, or simply not in a traditional family context? Although they may be a smaller percentage, we cannot get lost in essentialising the position of women in society. More research is required to better examine social forces on female suicide as a sum but also in parts. The following section will cover the continued increase in male and female youth suicide towards the end of the twentieth century and during the twenty-first century related to Indigenous status.

6.5 Indigenous Suicide

The increase in male and female youth suicide rates in SK and MB and the flattening of the sex-ratio coincides with the literature on Indigenous suicide. As detailed above, SK and MB have higher proportions of Indigenous peoples between the 10 provinces. Although they are a minority group in SK and MB, as mentioned above, Indigenous suicide in MB accounted for 25% of

suicides between 1994 and 2001, with the percentage increasing to 56% among youth. Across all age groups, Indigenous suicide made up approximately 50% of suicides in MB between 1984 and 1988, and 1994 and 2001. Approximately 30% of suicides between 2005 and 2016 were identified as Indigenous in SK.[374] Between 2005-2016 in SK, suicide was 29.7 times higher among Indigenous females aged 10-19 and 10.1 times higher among Indigenous females in their 20s, compared to their non-Indigenous counterparts.[375] Males in the same respective age groups were 6.4 and 7.3 times higher than their non-Indigenous counterparts. Evidently, female Indigenous youth were more at risk. Although ethnicity/identity cannot be ascertained in this thesis, the results show that female suicide in SK and MB increased into the twenty-first century while their male counterpart stagnated at high levels.

Similar values are also seen for BC Indigenous suicide though Michael J. Chandler et al. highlights the importance of stratifying the data. Chandler et al. found that the suicide rate for Indigenous youth aged 15 to 24 between 1987 and 1992 was nearly five time higher than non-Indigenous youth.[376] Importantly, the suicide rates were not equal when stratified across tribal councils. Of the 196 bands in BC at the time of their study, 111 had no youth suicides whatsoever; when grouped into tribal councils, 6 of the 29 reported no youth suicide; similar results were found when grouping by linguistic groups with 5 of 16 having rates of zero.[377] Data such as these emphasise the importance of understanding communities that share an identity as still being multi-faceted outside of the aggregate.

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[374] Jack Hicks, "Saskatchewan First Nations Suicide Prevention Strategy, Prepared by the Federation of Sovereign Indigenous Nations" (Saskatchewan: Unpublished, May 2018), 4-5.
[375] Ibid., 8-9.
[376] Michael J. Chandler et al., "Personal Persistence, Identity Development, and Suicide: A Study of Native and Non-Native North American Adolescents," *Monographs of the Society for Research in Child Development* 68, no. 2 (2003), 69.
[377] Ibid.

Although this may seem as indicative of Indigenous communities being historically prone to suicide, nothing is further from the truth. As the results show, rates among youth were very low prior to the 1970s for all people residing in Canada, and there is no evidence to suggest it differently. As Jack Hicks writes, "the evidence we do have tells us that until relatively recently, perhaps five decades ago" Indigenous suicide rates were relatively low.[378]

There is a problem of perspective when faced with Indigenous suicide. As mentioned, Indigenous suicide differs greatly from non-Indigenous suicide. A macro-view capturing rates at a provincial or national level fails to understand the idiosyncrasies of the individual and communities within a context of ongoing and historical violence; an overly-individualised perspective does not completely capture the levels of relation between individual, group, and social whole. As such, both methods seem to fail in accounting for the needs of suicide studies in Indigenous communities.

The theoretical framework developed here-in may not fully apply to Indigenous suicide and the interpretation of data for SK and MB who have the highest proportions of Indigenous peoples among the provinces. Authors such as Jienian Zhang et al. theorise a 'meso-level' analysis for suicide between the aggregate of Durkheim's structuralism and the individualism of culturalists or psychologists. The meso-level is where theoretical abstraction in the aggregate intersects and relates with structure, culture, and social psychological processes.[379] Gary Alan Fine argues that meso-level analysis is a focus on the 'group' as a mechanism where individuals fit into larger structures and through which social structures shape the individual.[380] Doing so, a group-based

[378] Hicks, "Saskatchewan First Nations Suicide Prevention Strategy, Prepared by the Federation of Sovereign Indigenous Nations", 4.
[379] Zhang et al., "Phenomenology, Cultural Meaning, and the Curious Case of Suicide: Localizing the Structure-Culture Dialectic," 518.
[380] Gary Alan Fine, "Group Culture and the Interaction Order: Local Sociology on the Meso-Level," *Annual Review of Sociology* 38, no. 1 (August 11, 2012). 159.

phenomenology begins to form links to larger social structures and inequalities such as socio-economic status, sexuality, ethnicity, gender, etc.[381] Thus, in some ways, inserting agency into the social structure pressures theorised by Durkheim, by questioning how structural forces are interpreted and acted upon by individuals in the context of cultural understandings of suicide.

This perspective put forth by Zhang et al. works well for suicide in Indigenous communities, amongst other culturally specific communities. They are relatively smaller groups with their own power relations, that allow and require an understanding of the deeper cultural and historical roots of suicide within these communities. Indigenous suicide will have far different social structural patterns compared to non-Indigenous suicide. Thus, insider knowledge might help better shape a theory and understanding of what is happening within the communities and is far more important than the size and scale of macro-level sociology.

Without claiming to have all the answers, some possible explanations for high rates among Indigenous peoples will be provided. Further research is necessary among and within these communities that require their own focus. Not only as a point of comparison between Indigenous and non-Indigenous, but also within and between Indigenous communities.

Across Canada, the most obvious and contemporary social forces to the study period would be the government legislated acts that enabled and enacted the Sixties Scoop (the forced relocation of Indigenous children into non-Indigenous families), beginning in the mid-to-late 1950s and into the 1980s. In tandem, the Sixties Scoop intensified the continued implementation of the Indigenous residential school program, ending with the last school closure in 1996. All this happened in conjunction and in the backdrop of centuries of historical injustices, cultural erasure, and violence. The aftermath of the Sixties Scoop and the residential school program is widely detailed with the

[381] Zhang et al., "Phenomenology, Cultural Meaning, and the Curious Case of Suicide: Localizing the Structure-Culture Dialectic," 526.

Truth and Reconciliation Commission report in 2015, wherein generational trauma lingers within Indigenous communities, contributing to "high rates of poverty, suicide, the poor or having no education, overcrowding, crumbling housing, and unsafe drinking water.", among a multitude of other things.[382]

Many scholars cover the idiosyncrasies of Indigenous suicide, such as Michael J. Chandler et al. for Canadian Indigenous suicide, or Ronald Niezen with suicide clusters in Indigenous communities. Whereas Chandler et al. follows a cultural psychological script influenced by Durkheim, Niezen turns towards Gabriel Tarde. The former found that a lacking cultural continuity in personal identity development may have led to a disproportionate amount of Indigenous suicide recorded over the past decades. Building on what was already said above, Chandler et al., found that the variability in Indigenous youth suicide between Indigenous communities is largely tied to the efforts these communities make (when resources are available) in preserving and promoting their culture and regaining control over these aspects and communal lives.[383]

Their analysis ran from 1987 to 2000 and found statistically significant results between cultural strengthening and re-appropriation, and fewer youth suicides.[384] In essence, youth suicide rates between Indigenous communities vary, with some having a serious excess whereas others had very little, to none. According to Chandler et al., cultural continuity is key for youth maintaining a healthy diachronic personal identity of "sameness-in-change".[385] Importantly, their study of Indigenous communities in a more localised fashion (the province of BC) connects the individual to larger structural and historical forces of (continued) colonisation and show how

[382] Truth and Reconciliation Commission of Canada, "Honouring the Truth, Reconciling for the Future: Summary of the Final Report of the Truth and Reconciliation Commission of Canada." (Canada, 2015).
[383] Michael J. Chandler et al., "Personal Persistence, Identity Development, and Suicide: A Study of Native and Non-Native North American Adolescents," *Monographs of the Society for Research in Child Development* 68, no. 2 (2003), 74.
[384] Ibid.
[385] Ibid., vii.

aggregate data at the national level sometimes fails to capture nuances. In effect, Chandler et al. provide a Durkheimian approach centered on egoistic suicide. Connecting to family and community implies fewer suicides whereas individualism leads to more suicides.

On the other hand, Niezen counters the Durkheimian notion that suicide is more likely in industrial societies with limited integration/regulation.[386] Rather, Niezen argues suicide might be better studied through imitation, ideas, and networks of communications, as theorised by Gabriel Tarde.[387] Niezen's line of argumentation hinges on a longstanding critique that there is something deeply social in how people choose to take their own lives.[388] In the context of Indigenous suicide, the use of similar methods of suicide within a shared temporal and spatial environment and community among youth functions as an act of social cohesion, termed as 'suicide clusters'.[389] Ideas about suicide acted as a point of connection where suicide occurred in contexts of social isolation and loneliness.[390] Thus, highlighting a paradox of social cohesion through social isolation, or simply, a web of contradictory and complex social phenomena.

Although suicide clusters as imitation may be plausible in smaller communities such as Indigenous communities, this theory is more difficult to accept for larger structural forces shaping province-wide suicide cohorts. A focus on *modus operandi* at the aggregate level reverts to cultural script theories. Scholars such as Silvia Sara Canetto argue that suicide is culturally specific and gendered – methods used are gender- and culture-specific, as are the differences between attempted and successful suicide.[391] Although it is true that the study of suicide necessitates a sex-

[386] Ronald Niezen, "The Durkheim-Tarde Debate and the Social Study of Aboriginal Youth Suicide," *Transcultural Psychiatry* 52, no. 1 (February 2015), 97.
[387] Ibid., 98-99.
[388] Ibid., 102.
[389] Ibid., 108.
[390] Ibid.
[391] Silvia Sara Canetto, "Women and Suicidal Behavior: A Cultural Analysis.," *American Journal of Orthopsychiatry* 78, no. 2 (2008), 259; Kathy McKay, Allison Milner, and Myfanwy Maple, "Women and Suicide:

disaggregated approach, cultural scripts ignore that different levels of social reality reveal different levels of human interaction. Culture (with a capital 'C') is not equally universal or uni-dimensional across a population. Further, a focus on cultural scripts ignores the larger social forces at play that vary between genders or between individuals in a community. As Zhang et al. argue, suicide as a cultural object is rarely a driving force for an individual, "This is not to say cultural meanings do not activate singleton suicides, but the ecological fallacy that delimits our assessment of the causal relationship between Durkheim's integration/regulation and individual-level choices remains salient for most suicidological models of culture."[392]

Perhaps an approach such as Zhang et al.'s, adopting a meso-level perspective can best identify practices to understand and reduce Indigenous youth suicide. Already, Chandler et al. have shown that Indigenous communities preserving and promoting their shared culture and history have lower rates of youth suicide, implying that structural forces are mediated by the community, 'protecting' youth. Albeit, more depth is required, considering Chandler et al. chose categories such as "cultural facilities", "land claims", or "health" as measures of cultural continuity and regaining sovereignty, that may not fully explicate the complexity of interactions between group-culture-individual.[393]

In all, although the details are brief, it is undeniable that a connection exists between the increasing rates of suicide among male and female youth in SK and MB and indigeneity. It is difficult to pinpoint when Indigenous suicide started to eclipse non-Indigenous suicide among youth. Though, we know for certain as of 1984 due to Sigurdson et al.'s publication, but prior, the

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Beyond the Gender Paradox," *International Journal of Culture and Mental Health* 7, no. 2 (February 18, 2013), 8; Leah Shelef, "The Gender Paradox: Do Men Differ from Women in Suicidal Behavior?," *Journal of Men's Health* 17, no. 4 (September 30, 2021), 24.

[392] Zhang et al., "Phenomenology, Cultural Meaning, and the Curious Case of Suicide: Localizing the Structure-Culture Dialectic," 519.

[393] Chandler et al., "Personal Persistence, Identity Development, and Suicide: A Study of Native and Non-Native North American Adolescents," 73.

literature and/or the data do not seem to exist. This being said, we know that it was not 'forever', but we do not have data that can provide a more accurate portrait of suicide rates among Indigenous peoples.

In sum, the study of Indigenous suicide in Canada suffers from many problems related to historical trauma and ongoing systemic inequalities. This section covered, very briefly, the ongoing study of Indigenous suicide. Clearly, the study of Indigenous suicide requires a perspective that accounts for their historical past that continues to impact current difficulties in public health. Perhaps a group-level approach theorised by Zhang et al. may provide a better vantage point in incorporating history, culture, and community networks in conjunction with structural forces.

Further, in no way does this section argue that Indigenous suicide is a problem only to SK and MB. Simply, they are the provinces with the largest proportion of Indigenous peoples at the province-level and the highest levels of continued youth suicide with worrying increases in the past two decade. Many studies highlight the disparities between Indigenous and non-Indigenous suicide such as Nathaniel J. Pollock for the subarctic region of Labrador in Newfoundland and Labrador.[394] Or, among the Inuit in Nunavik region of QC, who had 6.5 times the suicide rate compared to the rest of QC between 1987-1994, among many other regions.[395] The fact remains, suicide among Indigenous peoples are usually a magnitude higher than the rest of the population.

As it pertains to SK and MB, the need to study Indigenous youth suicide is extremely pressing considering their high rates among males and females. Further, the results for SK males indicate the presence of an estimated cohort effect among youth born between 1970 and 1974. On

[394] Pollock et al., "Tracking Progress in Suicide Prevention in Indigenous Communities: A Challenge for Public Health Surveillance in Canada," *BMC Public Health* 18, no. 1 (November 27, 2018).
[395] Lucy J. Boothroyd et al., "Completed Suicides among the Inuit of Northern Quebec, 1982-1996: A Case-Control Study," *MAJ : Canadian Medical Association Journal = Journal de l'Association Medicale Canadienne* 165, no. 5 (2001), 749.

the other hand, the results for females indicate an estimated cohort effect for those born in the 1990s. How these cohorts may or may not connect to Indigenous suicide is important as Indigenous youth make up the brunt of suicides when compared to population size, especially among females. Between the two, females require special attention as their cohort is currently in mid-adulthood where rates among females are historically the highest, as the estimated age effects showed. Lastly, these results indicate a need to focus on youth as a moment of precarity for SK and MB, where rates are increasing rapidly into the last study period of 2015-2019, with no sign of relinquishing.

6.6 Other Possible Avenues of Research

Immigration as it relates to suicide patterns is often overlooked and is an important social factor for a country like Canada. The 2011 census found that 20.6% of the Canadian population was foreign-born, ranking Canada as the second largest immigration population in the world.[396] A decade later, the 2021 census found that 23% of the Canadian population was foreign-born.[397] The immigrant population has been steadily increasing after the Second World War and the majority settle in ON, BC, and QC.[398] These three provinces have seen serious depreciations in their suicide rates after the emergence of youth suicide. Further, ON and BC males and females have suicide rate curves that are mostly unchanged since the 1990s. It is possible that the influx of immigrants has impacted the suicide rates of BC, ON, and QC.

The influx of immigrants may have "suppressed" the rate of suicide in certain provinces. Éric Caron-Malenfant stated that in 1996 more than 60% of the immigrant population in Canada

[396] Natasha Ruth Saunders et al., "Suicide and Self-Harm Trends in Recent Immigrant Youth in Ontario, 1996-2012: A Population-Based Longitudinal Cohort Study," *BMJ Open* 7, no. 9 (September 2017), 2.
[397] Statistics Canada, "Focus on Geography Series, 2021 Census: Canada," last modified January 11, 2023, https://www12.statcan.gc.ca/census-recensement/2021/as-sa/fogs-spg/page.cfm?lang=E&topic=9&dguid=2021A000011124.
[398] Barry Edmonston, "Canada's Immigration Trends and Patterns," *Canadian Studies in Population [ARCHIVES]* 43, no. 1–2 (May 23, 2016), 86-87.

were based in Montréal, Toronto, and Vancouver, with 35% of them being in Toronto.[399] Caron-Malenfant found that regardless of their continent of birth, suicide rates among immigrant populations in Canada were lower than Canadian-born rates.[400] Further, that rates among immigrants in Montréal, Toronto, and Vancouver between 1995 and 1997 were the lowest among all immigrant suicide rates across Canada.[401] Caron-Malenfant found that suicide rates among immigrants tended to mirror the suicide rates from their country of origin.[402] Meaning, that a combination of cultural and social factors from their origin country, tightly-knit immigrant communities, and a 'selection effect' of choosing immigrants based on physical and mental health criteria, may have kept their suicide rates lower than non-immigrant populations.[403] The suicide rates among males and females in QC, ON, and BC are stagnant after the emergence of youth suicide, when compared to the provinces of Atlantic Canada, SK, or MB, who receive fewer immigrants.

Immigration is not the only factor influencing the reduction in rates among BC, ON, and QC, but it is certainly an area that requires further research. Natasha Ruth Saunders et al. found similar results to Caron-Malenfant, arguing that recent immigrants to Canada between 2003 and 2017 had substantially lower suicide rates compared to "long-term residents".[404] The fact remains that immigrant populations tend to commit suicide at lower rates that Canadian-born people, and they make up a substantial proportion of the population for these three provinces.

[399] Éric Caron-Malenfant, "Suicide in Canada's Immigrant Population," *Health Reports* 15, no. 2 (March 2004), 14.
[400] Ibid., 12.
[401] Ibid., 14.
[402] Ibid.
[403] Ibid., 12.
[404] Natasha Ruth Saunders et al., "Suicide and Self-Harm in Recent Immigrants in Ontario, Canada: A Population-Based Study," *The Canadian Journal of Psychiatry* 64, no. 11 (November 2019), 783.

6.7 Strengths and Limitations

By covering every province between 1950 and 2019, I was able to show that youth suicide rates increased simultaneously across all provinces for males and females. Thus, the results show that the rapid increase in youth suicide rates has challenged the more than century old traditional Durkheimian curve. The social forces that impacted youth suicide rates acted simultaneously across Canada. The result of this change plainly indicates the need for a sociological perspective with possible research areas detailed above. The youth suicide rates of our contemporary are the symptom of long historical roots that begin in the twentieth century, and we need to understand what changed then to better understand what is happening now.

As for the methodology, the APC-I model used in this thesis allows for a more nuanced analysis of cohort effects for Canadian suicide rates because it can measure life-course dynamics. Cohort effects can wax and wane over the lifetime of a cohort throughout the periods and this was in evidence in the results section. Only SK, QC, and Atlantic Canada had estimated cohort effects for males even though every other province had above-average suicide rates compared to cohorts that came before. The APC-I model clearly showed that the above-average suicide rates were tied to the fulgurant increase in 15-24 suicide rates and quickly died out thereafter as the cohort aged.

For female cohorts, the APC-I model showed that estimated cohort effects exist for females born as of 1985-1989 for all provinces except QC and Atlantic Canada. Further, that the estimated cohort effects for females were significant and require attention. Although their suicide rates are a magnitudes difference than their male counterparts, their rates are increasing and are not simply the product of age or period effects. As it stands, suicide rates for females are increasing at an alarming pace in SK and MB and especially among youth. Rates are also increasing, albeit at a

slightly slower pace, in ON, AB, BC and Atlantic Canada. The elision of female suicide in suicide studies is unacceptable.

This study also provided an analysis of suicide rates across all Canadian provinces, for a long period of time. Connections were drawn between provinces and patterns were recognised between provinces for the emergence of youth suicide. Every province witnessed a rise in youth suicide rates that happened in tandem. In addition, suicide rates for youth did not return to 'normal' even though they did decrease in intensity. Doing so, this study is able to posit social forces as impacting suicide rates across provinces.

A sociological perspective found that social forces were at play during the second half of the twentieth century. Future studies must consider the impact of drastic changes in gender relations that were expounded above. It is possible that changes to employment, family, marriage, divorce, and birth rates severely impacted how male youth conceptualise their linearity of time and position in society. All of these factors are statistically correlated with increases in suicide as of the 1960s.

A sociological perspective also allows for the politicisation of suicide in Canada. Capitalism demands increasingly flexible workers while denying values of family life that calls for trustworthiness and commitment. The shifts in family-life towards individualism allowing for greater flexibility denied the place of the family usually available to assuage the forces and stress of employment under a Capitalist regime. This is, of course, not a defence for traditional family values but merely a statement of change. The changes to the family happened in tandem with shifts in gender relations and deindustrialisation, deeply impacting the identity and position of men in society. Thus, the ability for male youth and men to envisage a future is increasingly distraught. These effects are possibly even more an issue in economic peripheries that depend on healthy industrial relations where men identify with arduous and senseless labour practices. Outside capital

can sometimes quickly shift and lend undue precarity on how men identify in rural regions, as seen with deindustrialisation.

Little is said about the lucrative market of pharmaceuticals that profit on the mental health crisis and the individualisation of mental health disorders. It is a product of the atomisation of problems to the individual psyche and says nothing about their causation. In a world where mental health disorders caused by climate crisis (among other things) are becoming increasingly more common, we need to look at the Capital that is willfully pushing our world closer to destruction. We also need to question the power relations of how psychotropic drug treatments create productive members of society. As Fisher writes, "Affective disorders are forms of captured discontents; this disaffection can and must be channeled outwards, directed towards its real cause, Capital."[405] A sociological perspective is able to decipher these power relations and symbolically associate these shifts in social structures to suicide. It provides an added layer of complexity to suicide beyond the individual, with studies that often ignore these webs of interconnection.

Loss of employment, socio-economic status, mental health disorders, substance use, economic peripheries, being a man, and youth are not just risk factors, they have long historical roots of unequal power relations. As shown above, Capitalism has rendered precarious how youth conceptualise their future in a world where employment is uncertain. Socio-economic status is intimately tied to employment opportunities that are increasingly 'flexible' and neoliberal policies of austerity, as seen with Grell.

There is also the interconnected weave of gender relations that runs through most of these factors and with how Durkheim conceptualises integration/regulation forces. A sociological perspective gives space to these interpretations by taking a long socio-historical perspective. The

[405] Fisher, *Capitalist Realism*, 80.

results require a focus on gender relations, it is not sufficient enough to state that men commit suicide more than women. Further, identifying variables deeply intrinsic to how men identify themselves is also not enough. As the discussion shows, the disruption of the hegemony of men may have been a precipitating factor to the increase in male suicide rates. Interpreting these variables with a more nuanced analysis also complicates how we should go about understanding these variables.

My findings share the limitations of other APC suicide studies. (1) I only cover two variables, age and sex, of a phenomenon that is incredibly multi-faceted and influenced by a multiple variables that are inter-connected and related. Further, the findings are at a provincial level and may not reflect the realities when more pointed research is conducted on specific regions, municipalities, a subset of the population, or cities within a province. Which leads to the second limitation, (2) the interpretation of the results should be wary of the ecological fallacy. What may be true at the aggregate level may not be true at the individual level. A group-level relationship does not necessarily equate to the relationship at the level of the individual. Therefore, caution should be afforded when interpreting the statistics to individual cases.

There is also the problem of underreporting, as detailed in the methodology and when discussing Indigenous suicide. Underreporting in general is controlled, to a certain degree, by the APC model. Firstly, period effects control for changes to the reporting system and to changes between versions of the ICD that affect all age groups. Effectively, they appear in the period effects and are accounted for. If there are shifts in how suicides are reported for specific age groups, these changes appear in the interaction terms, and by extension, as cohort effects. Of course, this is theoretical, and the distance between legal shifts in coroner reports and actual application of new

procedures cannot be quantified. Thus, this issue continues to remain nebulous and a source of uncertainty in studies using suicide data.

The APC model also has certain analytical limitations. Age effects in particularly are a poor tool of analysis for long periods of time. As seen, no positive age effects were found for youth age categories of 15-24 even though they experienced sizeable growth in their suicide rates as of the 1960s. Further, age effects cannot be measured by period, limiting the analysis. It is obvious that what may impact a certain age group in 1950-1954 is likely not the same effect felt in 1970-1974 and certainly not in 2015-2019. Even if 40- to 64-year-olds maintained high suicide rates throughout the entire timeline, the age effect itself has most likely mutated between the first and last period. Future methodological analyses should look into fine-tuning the APC model.

Cohort effects are also measured on sometimes incomplete cohort groups. Male cohorts with significant estimated cohort effects are not fully aged out. In 2014-2019, the deadliest cohorts were between 45 and 59. As of the publishing of this thesis, the cohorts will be between 50 and 64. With time, it will be interesting to revisit this study and map the full extent of the cohorts, from inception to old age. Then, we will be able to fully understand if a cohort effect exists for the cohorts born during the emergence of youth suicide.

The same is all the more important for female cohorts as their cohorts are ostensibly still very young, born near and within this millennium. The youngest cohort was 20-24 in 2015-2019. Essentially, these cohort must be tracked over the coming decades to measure any continued cohort effects. As seen, suicide rates for females across the provinces were highest among youth aged 15 to 24. Perhaps this may be a similar pattern to the fulgurant emergence of youth suicide for males as of the 1970s and we might see a continued cohort effect as they age.

There was also the issue found in the APC-I model related to the Poisson regression and zero values. The results for females were heavily hampered by zero values and this impacted the analysis. Although the predicted rate graphs were interpretable, the coefficient values were not. Future research should look to other possible regression models such as a zero-inflated Poisson regression model, a negative binomial regression model, or any other model that may accommodate zero values.[406] There is also the possibility of excluding older age groups that harbour most of the zero values, but this will greatly change the frame of interpretation.

The study of social health *à la* Durkheimian also raises questions of agency. Further, it has difficultly in providing solutions to limiting or preventing suicides and dealing with social problems.[407] The Durkheimian structuralist approach can sometimes ignore the idiosyncratic differences at the micro-level and fail to determine the impact social forces have on individual lives (ecological fallacy). Although Durkheim's framework is still widely used in sociology and inescapable, there is room for improvement, as this thesis has tried to do. By combining Durkheimian theory with Fisher's own, it is possible to connect social forces with political foundations.

As it pertains to agency, Durkheim would argue that individualistic approaches lack agency. In a footnote (#20) at the end of Book III Chapter IV, Durkheim posited that social forces determined through a statistical approach leaves "the question of free will much more untouched".[408] Rather, the individualistic approach is more likely to promote a deterministic approach.[409] The logical thought process seems fairly straightforward now, considering that mental

[406] Though, the negative binomial model may not be the best suited, as detailed in the journal article appendix of Lu, 2024.
[407] Zhang et al., "Phenomenology, Cultural Meaning, and the Curious Case of Suicide: Localizing the Structure-Culture Dialectic," 518.
[408] Durkheim, *Suicide: A Study in Sociology,* 325.
[409] Ibid.

health disorders are often linked to chemical imbalances limited to the individuals genetic makeup. Social forces on the other hand are outside the individual and do not determine if one individual or the other may commit suicide.[410] For reasons specific to each individual's social integration/regulation, socio-economic status, institutional/structural privileges, and more, some can and cannot resist social forces.

[410] Ibid.

Chapter 7: Conclusion

The descriptive findings of this thesis demonstrate the simultaneity of social forces acting upon youth suicide in Canada within the same decade of the 1960s. These social forces were also, to a lesser degree, felt by older age groups as the period effects showed. The increase in youth suicide rates and its continued presence clearly indicate a break from traditional suicide rate trends mapped by Durkheim over a century ago. The continued presence of youth suicide must be framed as a product of its historical emergence in the 1960s and not as a fragment of a contemporary phenomenon related to the psychocentric paradigm.

The social forces that acted upon the youth of the second half of the twentieth century were an amalgamation and intersection of major structural changes in the family, employment, marriage, gender relations, and much more that was not covered. Not only do these shifts lead to an increase in youth suicide but they may have also altered how youth perceive their place in the world as they aged. Estimated cohort effects were measured for males born in the 1960s and for females as of the 1985-1989 cohort. These social forces may have left an imprint they carried throughout their lifetime.

Albert Camus wrote in *The Myth of Sisyphus* that "Living, naturally, is never easy."[411] Though, that someone may commit suicide due to the displeasures of life is a truth, "yet an unfruitful one because it is a truism."[412] No less, paradigmatic studies of suicide tend to adopt this perspective. A focus on mental health disorders such as depression isolates the cause to the

[411] Albert Camus and Justin O'Brien, *The Myth of Sisyphus*, Second Vintage International edition (New York: Vintage International: Vintage Books, a division of Penguin Random House LLC, 1983), 5.
[412] Ibid., 8.

individual and mystifies the social. As Gagné and Dupont write, we cannot replace "*l'intention de l'acteur par l'action d'un facteur*".[413]

Categorically, this thesis emphasises the need for a sociological perspective to help explain why youth suicide rates rose in tandem across Canada. It seems unlikely that a theory of suicide can arise solely out of a psycho-centric lens that can explain the spread of risk factors across all provinces within the same decade. Was it a force of almost telepathic urgency? The incontrovertible fact remains that suicide rates in each province were moving concurrently to each other and to other Western countries. By ignoring this very premise, the current suicidology paradigm is unlikely to come to a definitive conclusion on what is causing such high suicide rates among youth.

This thesis is not so much a negation of current suicidology thought but rather an analysis of what is missing. Future research can look to a more dissected analysis of what has been presented in the discussion. Indigenous suicide must be at the forefront of any future research if we solely base ourselves on a hierarchy of which group is most suicidal. A focus on youth female suicide is also incredibly necessary seeing as youth female suicide rates have been climbing since the turn of the century, inversing male suicide rates that are on the decline. Crucially, the literature on female suicide from a Durkheimian perspective remains sparse, with most analyses relying on cursory adaptations of male-centric variables that are often disregarded when found to be statistically insignificant.

Perhaps every generation has a *bête noire* that haunts its existence, but this statement seems to ring empty in the face of climate crisis, the rise of political extremes, and the concentration of wealth. In a world of no seemingly plausible alternative to Capitalism, "it is becoming

[413] Gagné & Dupont, "Les changements de régime du suicide au Québec, 1921-2004," 25.

uncomfortably clear that consumer self-regulation and the market will not by themselves avert environmental catastrophe" or any catastrophe for that matter.[414] Current generations entering adulthood are faced with these questions, these conundrums, this powerlessness – they are offered pharmacological therapies. We know what happens when youth are faced with shifting standards opposed to established norms, see the 1960s, what will happen now?

[414] Fisher, *Capitalist Realism*, 80.

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Appendix Tables

Suicide rates per 100,000:

Age Group	Period													
	1950-1954	1955-1959	1960-1964	1965-1969	1970-1974	1975-1979	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014	2015-2019
15-19	2.32	2.55	2.84	6.87	12.19	14.35	22.92	24.96	29.30	32.26	21.82	12.39	10.70	9.62
Cohort	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000
20-24	4.78	5.13	7.81	14.64	23.53	31.64	36.91	36.28	42.76	43.28	33.03	22.91	17.95	15.51
Cohort	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995
25-29	6.01	9.51	10.53	14.05	20.61	26.54	37.15	36.66	37.07	40.55	31.70	23.34	20.02	17.36
Cohort	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990
30-34	7.36	9.72	10.26	13.42	18.33	27.18	32.94	35.88	39.59	44.20	34.56	26.68	24.18	17.64
Cohort	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985
35-39	7.83	10.76	12.28	16.09	21.81	23.11	29.14	35.08	37.76	44.88	38.28	31.60	29.20	18.95
Cohort	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980
40-44	9.64	13.37	14.02	16.92	20.81	23.48	33.15	32.43	34.76	45.55	38.76	37.79	31.73	22.41
Cohort	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975
45-49	13.17	15.98	14.33	19.72	24.15	23.29	31.18	31.16	35.03	44.16	42.14	37.21	36.72	27.77
Cohort	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970
50-54	15.65	16.48	18.99	23.16	24.77	24.16	32.30	31.75	33.21	38.42	38.04	33.76	33.75	31.77
Cohort	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965
55-59	13.66	20.45	17.49	22.18	24.12	23.67	34.53	33.94	31.92	33.54	31.65	29.65	32.54	27.11
Cohort	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960
60-64	20.13	25.94	22.57	17.20	25.28	22.29	32.82	27.40	25.99	29.42	25.83	24.87	25.00	22.54
Cohort	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955
65-69	14.63	13.44	17.30	20.15	22.25	19.29	28.14	26.16	23.22	26.84	19.69	20.72	19.89	20.33
Cohort	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950
70-74	14.74	13.07	16.57	14.99	19.38	19.93	28.88	31.00	26.86	30.82	25.00	20.50	20.80	15.99
Cohort	1880	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945
75-79	19.49	21.31	14.93	10.11	18.56	19.36	30.55	27.79	29.37	32.94	31.62	22.06	22.34	19.42
Cohort	1875	1880	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940
80-84	20.12	17.21	14.37	12.77	11.65	15.90	27.67	26.47	30.98	24.47	24.08	25.11	25.08	22.76
Cohort	1870	1875	1880	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935

Table 19: Suicide rates per 100,000 for Québec males, 1950-2019.

Age Group	Period													
	1950-1954	1955-1959	1960-1964	1965-1969	1970-1974	1975-1979	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014	2015-2019
15-19	4.85	3.20	5.40	6.63	12.88	14.85	15.26	14.05	11.00	11.12	9.30	7.36	9.51	9.89
Cohort	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000
20-24	7.78	10.63	12.13	14.95	23.08	28.02	23.48	20.19	17.72	15.02	12.69	13.93	14.31	14.71
Cohort	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995
25-29	9.19	12.02	12.41	16.69	20.31	26.13	23.90	21.97	18.26	16.14	13.26	11.99	13.15	14.84
Cohort	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990
30-34	12.00	11.20	14.33	16.67	17.27	21.88	21.31	23.17	19.50	18.01	16.07	14.12	13.79	16.61
Cohort	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985
35-39	14.01	15.52	17.57	17.99	25.05	23.86	18.66	20.79	21.19	20.56	16.54	16.56	16.45	17.00
Cohort	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980
40-44	24.68	17.00	19.41	24.16	31.18	27.37	22.32	20.15	19.86	20.67	17.41	19.13	17.81	17.86
Cohort	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975
45-49	17.41	25.81	23.19	26.13	29.70	30.05	26.61	20.47	19.67	19.55	18.15	20.94	20.94	21.69
Cohort	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970
50-54	27.95	28.01	29.68	32.17	32.11	30.94	27.31	22.28	17.89	19.09	17.73	20.50	22.06	19.61
Cohort	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965
55-59	29.41	35.39	32.08	39.38	32.76	29.22	29.08	21.91	18.36	17.97	16.56	18.30	20.88	21.40
Cohort	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960
60-64	32.59	34.74	35.60	37.46	33.67	27.17	25.02	21.07	19.27	14.60	14.16	14.49	16.45	18.61
Cohort	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955
65-69	32.11	35.32	25.21	29.36	31.20	26.84	26.75	26.22	18.64	15.95	14.26	12.90	14.92	14.28
Cohort	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950
70-74	29.86	28.07	23.80	32.52	32.09	30.16	32.24	30.76	18.22	19.11	13.10	13.24	15.87	12.11
Cohort	1880	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945
75-79	35.11	27.67	33.62	27.55	30.11	27.95	34.34	26.13	26.58	18.72	13.95	18.40	16.48	14.91
Cohort	1875	1880	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940
80-84	17.48	30.12	25.27	26.46	24.27	32.63	35.90	36.79	29.77	28.59	17.68	18.97	19.83	17.81
Cohort	1870	1875	1880	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935

Table 20: Suicide rates per 100,000 for Ontario males, 1950-2019.

Age Group	Period													
	1950-1954	1955-1959	1960-1964	1965-1969	1970-1974	1975-1979	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014	2015-2019
15-19	2.86	2.85	7.72	10.84	16.36	36.30	38.51	24.95	33.95	22.13	19.63	27.73	15.90	33.28
Cohort	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000
20-24	12.63	13.61	13.60	17.80	26.91	40.51	40.17	35.59	37.66	38.99	29.98	31.81	26.95	37.83
Cohort	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995
25-29	9.48	13.31	18.16	18.74	21.05	30.62	34.41	25.86	31.70	30.77	22.22	23.69	24.45	29.85
Cohort	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990
30-34	9.80	16.52	20.59	15.33	24.94	24.50	27.58	32.49	28.78	30.01	23.23	22.97	26.68	28.06
Cohort	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985
35-39	13.45	20.22	13.61	25.51	29.29	25.18	34.78	19.56	22.47	31.92	31.26	26.73	26.71	25.23
Cohort	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980
40-44	26.10	21.05	21.05	14.48	39.58	25.85	25.17	28.19	23.89	30.90	25.41	25.49	27.59	31.03
Cohort	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975
45-49	21.22	19.50	33.28	33.63	31.33	20.77	26.34	21.66	26.44	24.73	26.84	23.08	26.59	35.60
Cohort	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970
50-54	19.47	22.81	33.36	23.64	32.04	28.74	33.85	27.12	22.82	27.46	22.51	24.42	17.14	29.42
Cohort	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965
55-59	25.72	37.19	29.33	31.06	29.95	29.99	30.03	30.93	37.98	14.26	20.43	16.44	24.06	30.28
Cohort	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960
60-64	36.38	35.38	30.05	21.44	24.77	37.46	27.59	27.55	28.35	25.15	15.17	12.78	13.43	25.23
Cohort	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955
65-69	29.00	29.90	33.69	34.67	24.60	22.54	26.16	20.47	30.50	15.62	11.16	16.33	13.62	21.84
Cohort	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950
70-74	25.04	21.34	29.20	8.16	25.26	29.75	33.60	18.61	17.93	23.58	24.12	19.01	18.46	25.55
Cohort	1880	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945
75-84	20.37	31.30	25.19	18.05	26.49	27.67	36.74	37.82	29.04	22.74	13.19	21.30	21.76	25.56
Cohort	1875	1880	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940

Table 21: Suicide rates per 100,000 for Saskatchewan males, 1950-2019.

Age Group	Period													
	1950-1954	1955-1959	1960-1964	1965-1969	1970-1974	1975-1979	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014	2015-2019
15-19	6.84	3.16	5.23	8.78	18.11	29.24	25.09	23.27	21.68	24.56	25.79	22.56	17.99	22.15
Cohort	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000
20-24	20.79	6.83	16.32	24.93	31.47	36.94	39.57	36.23	30.90	24.74	24.58	25.53	15.37	34.01
Cohort	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995
25-29	13.18	10.11	13.65	17.30	24.40	34.46	30.74	33.36	26.14	22.24	20.46	25.18	16.11	28.26
Cohort	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990
30-34	13.57	19.83	16.73	25.58	23.81	19.46	27.11	23.87	26.87	20.22	20.33	20.92	22.16	25.44
Cohort	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985
35-39	17.30	20.26	16.40	21.38	29.85	28.16	26.64	22.26	24.80	27.41	20.36	20.45	22.86	22.70
Cohort	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980
40-44	15.63	21.29	20.59	27.76	22.25	26.96	14.73	26.87	25.46	23.00	25.36	29.35	25.05	31.07
Cohort	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975
45-49	22.42	19.86	32.70	25.57	33.15	34.80	32.27	22.56	24.67	23.45	20.94	29.46	29.12	22.10
Cohort	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970
50-54	30.71	32.93	33.06	27.11	35.01	38.57	24.20	24.88	27.39	15.94	24.09	28.03	27.80	22.95
Cohort	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965
55-59	39.28	32.68	34.69	26.67	33.43	33.07	24.35	16.71	26.08	24.61	23.18	13.77	24.23	29.03
Cohort	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960
60-64	29.24	31.29	24.15	38.21	38.97	27.15	26.73	30.33	13.46	18.45	17.41	13.88	17.42	28.07
Cohort	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955
65-69	46.30	39.47	28.29	41.78	31.11	27.65	20.43	34.88	24.29	14.93	10.24	19.03	15.10	18.78
Cohort	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950
70-84	29.97	25.27	19.25	26.99	23.62	18.40	32.70	35.03	24.28	25.58	19.68	16.97	16.14	13.89
Cohort	1880	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945

Table 22: Suicide rates per 100,000 for Manitoba males, 1950-2019.

Age Group	Period													
	1950-1954	1955-1959	1960-1964	1965-1969	1970-1974	1975-1979	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014	2015-2019
15-19	2.60	4.66	7.51	14.56	19.36	9.48	30.52	29.76	27.61	23.72	17.54	16.40	19.72	16.42
Cohort	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000
20-24	10.13	9.32	15.36	25.67	26.04	16.68	34.30	34.46	39.62	37.19	25.28	22.19	25.96	26.23
Cohort	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995
25-29	7.53	15.05	16.45	18.75	16.49	14.89	28.83	27.57	39.80	27.18	22.16	18.40	22.14	26.47
Cohort	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990
30-34	13.43	17.90	21.78	22.47	21.76	9.23	32.45	31.24	36.20	35.02	26.43	18.28	20.51	23.99
Cohort	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985
35-39	14.12	19.28	19.10	22.10	19.28	16.80	26.36	27.88	35.07	31.84	30.61	23.15	18.36	25.13
Cohort	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980
40-44	22.15	27.06	23.85	28.40	23.45	20.27	30.97	29.25	30.17	33.21	32.73	26.12	25.48	25.84
Cohort	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975
45-49	34.97	27.61	24.31	29.81	28.52	17.35	37.35	32.93	31.11	31.15	34.13	29.25	29.34	30.96
Cohort	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970
50-54	40.55	38.84	28.48	34.15	25.16	15.50	38.20	33.71	33.72	31.47	33.89	28.47	30.09	30.17
Cohort	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965
55-59	28.09	33.81	36.82	40.62	29.81	13.09	36.30	36.37	34.88	32.83	30.47	26.87	26.47	28.70
Cohort	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960
60-64	35.14	36.31	45.83	28.23	25.51	12.87	33.61	34.36	32.00	22.19	23.19	20.35	28.04	33.16
Cohort	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955
65-69	28.51	39.11	34.36	20.99	22.38	12.12	28.91	28.04	26.41	27.33	19.38	20.91	19.08	22.37
Cohort	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950
70-74	33.33	27.62	19.89	20.80	18.78	5.29	43.58	33.73	24.59	26.87	20.34	21.60	25.36	22.46
Cohort	1880	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945
75-84	31.65	39.81	36.63	27.84	11.28	15.85	35.55	38.50	32.68	21.88	24.48	22.09	19.75	21.61
Cohort	1875	1880	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940

Table 23: Suicide rates per 100,000 for Alberta males, 1950-2019.

Age Group	Period													
	1950-1954	1955-1959	1960-1964	1965-1969	1970-1974	1975-1979	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014	2015-2019
15-19	2.91	2.62	4.44	4.75	7.84	13.22	13.71	15.46	18.67	14.86	10.86	15.18	16.64	13.57
Cohort	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000
20-24	3.37	6.43	9.21	11.92	20.03	26.39	30.32	26.12	26.27	21.12	19.13	19.66	19.26	28.47
Cohort	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995
25-29	5.19	10.63	12.39	13.86	15.73	20.16	20.31	21.08	27.19	25.06	21.97	23.34	21.11	26.42
Cohort	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990
30-34	5.33	7.17	11.03	15.04	23.50	23.11	20.74	17.33	23.46	24.27	18.88	18.44	17.45	21.76
Cohort	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985
35-39	10.89	7.11	14.51	19.09	24.17	21.51	18.27	17.60	26.69	29.02	24.72	29.16	19.23	26.01
Cohort	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980
40-44	12.25	11.13	20.08	17.09	21.21	26.16	21.71	19.84	24.41	27.25	27.57	25.07	27.43	29.88
Cohort	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975
45-49	12.63	16.81	15.56	21.36	19.62	23.63	26.91	20.65	25.60	24.92	23.64	25.09	32.72	28.44
Cohort	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970
50-54	17.46	15.81	17.68	22.65	24.07	22.44	30.42	25.75	24.49	27.57	24.32	25.08	31.13	29.09
Cohort	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965
55-59	16.34	21.92	16.98	23.80	26.16	23.23	27.71	33.73	28.39	23.40	22.54	27.07	28.35	28.83
Cohort	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960
60-64	18.84	25.20	17.43	21.74	22.95	28.27	22.59	22.69	24.33	23.30	20.48	18.71	22.70	24.18
Cohort	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955
65-69	16.92	16.56	15.94	19.61	17.22	20.05	21.14	25.16	22.41	21.89	16.01	15.76	18.20	16.21
Cohort	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950
70-74	16.11	15.20	14.84	14.48	18.98	21.02	24.29	25.48	23.81	17.71	19.69	20.67	17.55	14.97
Cohort	1880	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945
75-84	26.48	14.59	17.76	12.74	8.34	12.26	25.76	27.71	21.29	26.89	18.24	19.04	15.24	20.86
Cohort	1875	1880	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940

Table 24: Suicide rates per 100,000 for Atlantic Canada males, 1950-2019.

Age Group	Period													
	1950-1954	1955-1959	1960-1964	1965-1969	1970-1974	1975-1979	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014	2015-2019
15-19	7.97	6.28	7.96	11.75	12.74	22.28	19.66	17.91	16.57	10.52	11.12	8.25	10.21	11.98
Cohort	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000
20-24	14.66	14.55	17.74	23.73	35.19	38.73	27.89	27.88	25.61	21.22	19.33	17.33	15.05	13.91
Cohort	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995
25-29	15.28	18.29	15.25	25.74	30.24	34.09	30.93	28.76	27.07	21.09	19.41	16.82	16.21	17.36
Cohort	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990
30-34	24.28	14.62	20.91	22.93	27.50	25.51	29.30	23.58	27.97	23.25	19.64	15.89	19.47	15.28
Cohort	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985
35-39	17.48	19.00	20.85	28.26	31.53	24.57	24.25	21.10	28.06	24.30	26.80	20.45	21.13	14.74
Cohort	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980
40-44	35.61	23.81	28.13	30.76	32.80	31.40	25.61	23.12	27.40	24.02	23.09	23.76	20.17	16.32
Cohort	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975
45-49	35.08	28.62	31.18	28.77	37.99	36.29	21.37	29.35	22.84	23.68	23.38	22.91	23.85	23.77
Cohort	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970
50-54	49.54	36.40	37.71	34.40	42.02	37.52	28.78	25.31	22.59	24.63	25.18	22.07	24.15	19.84
Cohort	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965
55-59	45.55	44.05	37.67	38.25	33.90	33.79	31.21	27.12	21.76	19.74	22.20	24.72	27.45	23.82
Cohort	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960
60-64	61.48	37.20	40.24	39.19	33.58	28.64	27.07	23.80	18.57	22.56	21.10	18.00	21.34	18.29
Cohort	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955
65-69	40.84	42.58	39.15	35.69	27.88	34.79	25.69	24.31	22.56	17.66	16.96	18.28	17.68	17.66
Cohort	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950
70-74	40.54	38.58	32.95	44.72	35.32	28.25	26.24	26.54	19.02	21.69	19.37	16.95	20.84	16.96
Cohort	1880	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945
75-79	56.27	42.22	51.76	49.67	35.16	35.20	31.93	29.61	24.44	23.24	21.90	22.84	24.41	20.86
Cohort	1875	1880	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940
80-84	53.00	52.36	28.25	49.50	41.43	35.58	45.50	29.31	42.47	30.93	19.03	26.53	34.15	20.49
Cohort	1870	1875	1880	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935

Table 25: Suicide rates per 100,000 for British Columbia males, 1950-2019.

Age Group	Period													
	1950-1954	1955-1959	1960-1964	1965-1969	1970-1974	1975-1979	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014	2015-2019
15-19	2.78	8.42	4.62	6.54	11.90	13.62	11.39	14.79	18.38	15.04	10.43	8.51	1.32	2.29
Cohort	1935	1930	1925	1920	1915	1910	1905	1900	1895	1890	1885	1880	1940	1935
20-24	4.47	7.30	7.29	9.52	11.02	13.93	10.46	9.86	3.98	7.83	1.68	2.81	5.28	5.97
Cohort	1930	1925	1920	1915	1910	1905	1900	1895	1890	1885	1945	1940	1935	1930
25-29	5.11	9.21	11.24	16.08	12.74	9.96	14.01	7.75	2.44	7.18	8.27	10.63	13.60	14.55
Cohort	1925	1920	1915	1910	1905	1900	1895	1890	1950	1945	1940	1935	1930	1925
30-34	20.53	18.85	18.52	14.66	17.40	12.03	5.66	10.05	12.49	12.68	15.96	14.21	24.46	20.72
Cohort	1920	1915	1910	1905	1900	1895	1955	1950	1945	1940	1935	1930	1925	1920
35-39	23.33	15.19	16.50	12.05	5.76	9.12	9.68	11.43	11.88	15.05	18.17	17.55	16.88	15.49
Cohort	1915	1910	1905	1900	1960	1955	1950	1945	1940	1935	1930	1925	1920	1915
40-44	14.83	10.35	4.29	5.96	7.54	8.95	6.94	6.28	10.16	13.04	9.80	10.27	10.18	11.37
Cohort	1910	1905	1965	1960	1955	1950	1945	1940	1935	1930	1925	1920	1915	1910
45-49	2.83	4.92	5.79	4.38	7.21	7.76	8.67	8.47	6.95	6.81	10.19	9.02	4.61	5.81
Cohort	1970	1965	1960	1955	1950	1945	1940	1935	1930	1925	1920	1915	1975	1970
50-54	5.73	6.43	7.99	7.34	6.36	8.17	7.97	6.68	8.05	5.39	3.21	3.14	4.19	3.75
Cohort	1965	1960	1955	1950	1945	1940	1935	1930	1925	1920	1980	1975	1970	1965
55-59	5.22	6.10	6.15	6.87	6.59	6.32	3.95	7.64	3.73	3.70	5.26	5.39	7.26	6.79
Cohort	1960	1955	1950	1945	1940	1935	1930	1925	1985	1980	1975	1970	1965	1960
60-64	7.81	8.83	6.83	7.67	5.13	5.99	3.71	2.77	6.28	5.71	5.86	7.63	7.25	7.79
Cohort	1955	1950	1945	1940	1935	1930	1990	1985	1980	1975	1970	1965	1960	1955
65-69	6.80	6.78	7.73	4.69	5.26	6.58	4.37	6.46	5.30	7.32	7.94	8.23	7.79	6.14
Cohort	1950	1945	1940	1935	1995	1990	1985	1980	1975	1970	1965	1960	1955	1950
70-84	5.17	4.81	4.51	5.68	5.27	4.04	4.85	5.01	6.36	7.10	5.83	6.92	4.69	4.41
Cohort	1945	1940	2000	1995	1990	1985	1980	1975	1970	1965	1960	1955	1950	1945

Table 26: Suicide rates per 100,000 for British Columbia females, 1950-2019.

Age Group	Period													
	1950-1954	1955-1959	1960-1964	1965-1969	1970-1974	1975-1979	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014	2015-2019
15-19	0.00	1.54	2.71	2.26	5.27	6.14	4.39	6.29	7.93	6.49	8.90	16.22	18.13	18.52
Cohort	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000
20-24	3.24	1.74	1.71	4.44	6.36	8.85	6.32	6.62	6.85	5.55	8.16	11.66	13.46	17.43
Cohort	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995
25-29	4.71	5.18	5.60	3.68	6.38	7.88	9.21	7.52	11.08	8.58	7.39	7.00	7.37	13.96
Cohort	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990
30-34	1.66	6.61	5.34	3.88	9.66	9.69	8.02	8.12	6.85	5.03	8.91	8.91	7.79	12.71
Cohort	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985
35-39	5.23	3.35	8.34	9.23	10.28	11.85	6.61	9.50	7.30	6.97	8.98	8.84	6.93	8.55
Cohort	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980
40-44	6.14	7.31	1.74	8.77	7.87	10.50	6.01	8.37	5.63	4.95	5.92	7.66	12.55	5.29
Cohort	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975
45-49	7.35	6.36	7.57	7.30	11.23	10.13	10.71	8.17	5.20	5.74	5.05	7.16	8.76	5.44
Cohort	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970
50-54	5.56	10.43	8.89	9.88	11.51	11.54	12.35	6.55	6.33	7.11	5.87	7.67	8.32	8.73
Cohort	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965
55-59	3.05	5.96	5.45	13.95	10.50	10.00	7.91	8.41	4.52	4.32	5.49	7.52	6.54	8.43
Cohort	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960
60-64	6.98	6.90	6.53	11.48	12.38	8.82	8.28	4.10	4.43	4.71	4.51	7.56	6.23	6.69
Cohort	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955
65-84	6.97	10.43	5.28	3.61	6.60	9.68	6.68	6.64	3.44	3.38	2.75	3.47	2.66	3.56
Cohort	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950

Table 27: Suicide rates per 100,000 for Saskatchewan and Manitoba females, 1950-2019.

Age Group	Period													
	1950-1954	1955-1959	1960-1964	1965-1969	1970-1974	1975-1979	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014	2015-2019
15-19	1.25	1.11	1.72	1.95	3.26	4.18	2.81	2.86	3.21	3.08	3.27	3.50	3.51	6.11
Cohort	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000
20-24	3.38	2.66	3.95	4.57	5.42	7.05	5.39	4.93	3.85	2.99	4.07	3.71	4.60	5.73
Cohort	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995
25-29	4.05	3.34	4.82	6.12	9.71	8.95	6.27	5.75	3.89	3.91	3.97	3.76	5.29	6.25
Cohort	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990
30-34	3.72	4.01	7.17	8.10	11.14	7.25	6.19	6.63	4.75	4.59	4.26	4.12	4.89	5.65
Cohort	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985
35-39	4.60	4.85	5.96	9.10	12.47	10.54	8.87	6.78	6.76	6.03	4.72	4.93	5.51	4.92
Cohort	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980
40-44	5.84	6.09	5.83	11.83	15.33	12.72	10.88	7.43	6.00	6.41	5.05	6.31	5.66	5.14
Cohort	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975
45-49	8.92	8.28	8.36	14.19	17.30	15.34	11.53	10.04	6.37	7.95	6.51	6.52	6.09	6.78
Cohort	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970
50-54	8.12	8.88	10.26	14.65	18.83	15.21	12.37	9.37	6.87	5.78	6.19	6.91	8.20	8.54
Cohort	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965
55-59	9.25	8.40	10.67	12.51	17.19	14.18	12.80	9.36	6.34	5.71	5.81	6.22	8.23	6.93
Cohort	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960
60-64	8.62	11.86	7.08	12.46	14.63	13.43	11.91	8.19	6.00	4.66	4.61	4.92	5.51	5.71
Cohort	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955
65-69	12.63	8.03	9.31	9.19	13.49	14.36	13.21	9.65	5.74	4.86	4.80	4.70	3.76	4.87
Cohort	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950
70-74	6.36	5.50	6.23	7.81	9.98	8.63	8.11	7.11	5.44	4.30	3.77	3.67	4.09	3.95
Cohort	1880	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945
75-84	4.88	4.13	4.59	4.83	7.36	7.78	7.19	7.12	6.14	4.52	2.87	3.77	4.19	3.84
Cohort	1875	1880	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940

Table 28: Suicide rates per 100,000 for Ontario females, 1950-2019.

Age Group	Period													
	1950-1954	1955-1959	1960-1964	1965-1969	1970-1974	1975-1979	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014	2015-2019
15-19	0.58	0.51	0.82	1.05	3.15	3.02	3.08	4.31	5.63	8.72	7.52	4.56	3.81	3.34
Cohort	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000
20-24	2.27	1.66	2.52	4.01	4.86	6.87	6.09	5.49	5.84	7.25	6.81	6.63	5.44	5.62
Cohort	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995
25-29	2.87	2.74	3.29	5.96	8.27	10.07	9.37	7.74	6.80	8.36	6.33	5.40	7.05	4.97
Cohort	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990
30-34	2.54	4.44	3.74	7.55	7.94	9.55	10.34	10.35	9.48	9.23	7.42	5.67	6.91	5.68
Cohort	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985
35-39	2.79	4.93	4.37	7.46	8.85	11.10	10.70	12.27	9.99	12.32	11.88	7.98	7.30	6.03
Cohort	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980
40-44	5.59	3.50	5.61	6.64	8.77	9.57	13.93	12.03	12.52	15.63	10.81	10.71	9.30	7.95
Cohort	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975
45-49	6.70	5.73	6.43	7.05	10.32	9.51	13.34	13.66	11.62	15.62	14.10	12.09	11.68	8.85
Cohort	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970
50-54	5.64	5.91	6.62	10.23	8.53	11.14	13.20	11.20	10.55	12.28	13.25	11.92	11.82	11.35
Cohort	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965
55-59	4.15	6.01	4.05	10.38	8.32	11.52	13.36	8.77	8.94	10.79	9.05	10.91	10.83	9.39
Cohort	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960
60-64	8.44	6.05	5.06	5.31	7.11	7.91	9.92	8.16	6.62	8.65	6.65	7.49	8.90	8.23
Cohort	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955
65-69	2.11	3.73	1.61	5.40	8.84	6.64	6.75	7.46	5.27	7.05	7.14	5.23	6.00	5.22
Cohort	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950
70-84	2.93	2.51	3.15	2.64	3.66	4.26	6.49	4.64	5.07	5.46	3.46	4.09	3.77	4.43
Cohort	1880	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945

Table 29: Suicide rates per 100,000 for Québec females, 1950-2019.

Age Group	Period													
	1950-1954	1955-1959	1960-1964	1965-1969	1970-1974	1975-1979	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014	2015-2019
15-19	0.00	0.00	0.00	1.48	7.11	6.92	5.80	4.42	8.92	6.03	5.36	7.47	7.55	6.61
Cohort	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000
20-24	2.65	2.42	2.17	5.37	7.97	9.84	6.08	5.31	8.15	4.05	7.03	6.78	6.51	10.47
Cohort	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995
25-29	2.53	2.33	4.34	6.20	7.70	5.71	7.36	6.99	6.91	7.62	5.35	6.69	7.59	9.33
Cohort	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990
30-34	5.35	2.30	2.16	6.49	11.50	9.82	11.13	9.41	9.38	8.41	7.95	6.35	7.15	7.47
Cohort	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985
35-39	5.96	7.50	4.37	8.68	10.48	9.00	11.69	10.50	10.34	9.20	9.58	8.05	8.64	7.33
Cohort	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980
40-44	10.68	5.76	7.33	13.41	15.09	16.11	13.52	10.64	11.58	12.74	8.88	8.95	9.81	9.63
Cohort	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975
45-49	8.58	6.92	5.72	10.12	11.38	12.69	15.54	10.39	10.75	8.36	12.42	10.71	10.89	9.57
Cohort	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970
50-54	10.27	12.96	3.49	5.91	12.72	18.04	16.58	7.93	14.05	12.13	13.35	10.57	9.21	10.84
Cohort	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965
55-59	11.99	10.52	8.70	10.85	12.12	15.39	13.56	8.45	10.09	5.30	8.07	10.29	11.55	10.05
Cohort	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960
60-64	0.00	12.72	5.43	9.03	7.47	9.28	13.08	7.01	6.51	6.12	7.12	5.45	8.45	9.26
Cohort	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955
65-69	8.22	7.35	6.66	5.74	4.70	7.72	15.97	8.12	9.61	6.65	6.24	3.64	4.26	5.46
Cohort	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950
70-84	6.20	4.75	3.82	6.59	8.54	11.70	7.57	7.69	7.60	6.50	3.80	5.18	3.95	4.70
Cohort	1880	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945

Table 30: Suicide rates per 100,000 for Alberta females, 1950-2019.

Age Group	Period													
	1950-1954	1955-1959	1960-1964	1965-1969	1970-1974	1975-1979	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014	2015-2019
15-19	0.00	0.00	1.15	0.98	0.90	2.60	2.69	1.02	3.31	3.60	2.52	3.97	7.35	7.96
Cohort	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000
20-24	1.66	1.67	0.00	1.35	3.26	3.86	2.81	2.89	3.29	3.63	2.58	2.69	5.47	8.72
Cohort	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995
25-29	1.72	0.00	1.86	3.55	4.13	3.28	2.02	3.88	4.08	3.61	4.03	4.27	4.35	5.80
Cohort	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990
30-34	1.79	1.82	3.76	1.94	3.51	4.04	3.31	5.06	4.86	5.24	4.96	5.41	5.61	4.30
Cohort	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985
35-39	1.90	3.61	3.64	1.93	3.89	5.20	4.07	5.57	6.08	4.93	5.31	4.94	9.19	6.85
Cohort	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980
40-44	2.26	3.96	1.87	5.75	3.96	5.84	3.48	5.48	4.47	5.16	7.02	5.32	6.06	6.47
Cohort	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975
45-49	2.75	2.37	4.11	3.93	3.95	5.97	5.91	5.31	5.52	6.77	6.27	7.07	9.54	8.40
Cohort	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970
50-54	6.07	5.83	7.43	4.29	6.01	7.98	4.03	8.01	3.57	5.56	6.85	7.38	8.07	9.47
Cohort	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965
55-59	3.34	3.23	6.08	5.19	8.92	6.11	6.10	6.14	6.09	3.60	4.21	4.62	8.49	6.02
Cohort	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960
60-64	7.93	0.00	3.50	6.37	5.30	4.56	4.18	6.28	4.20	4.14	3.65	4.24	4.66	6.34
Cohort	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955
65-84	5.01	1.53	2.80	3.86	3.49	2.04	3.51	3.08	3.52	2.02	1.96	1.24	2.16	3.59
Cohort	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950

Table 31: Suicide rates per 100,000 for Atlantic Canada females, 1950-2019.

APC-I Regression Coefficients

	British Columbia			Alberta			Ontario			Québec			Saskatchewan			Manitoba			Atlantic		
	Coefficient	SE	Sig..	Coefficient	SE	Sig.	Coefficient	SE	Sig.	Coefficient	SE	Sig.	Coefficient	SE	Sig.	Coefficient	SE	Sig.	Coefficient	SE	Sig.
Intercept	-8.31	0.01	***	-8.33	0.01	***	-8.54	0.01	***	-8.45	0.01	***	-8.35	0.02	***	-8.51	215.55		-8.59	0.01	***
Age Main Effects																					
15-19	-0.75	0.04	***	-0.53	0.05	***	-0.79	0.02	***	-0.70	0.03	***	-0.34	0.06	***	-0.27	215.55		-0.69	0.05	***
20-24	-0.16	0.03	***	-0.07	0.03	*	-0.24	0.02	***	-0.11	0.02	***	0.11	0.04	**	0.19	215.55		-0.12	0.04	**
25-29	-0.12	0.03	***	-0.18	0.03	***	-0.22	0.02	***	-0.04	0.02		-0.04	0.04		0.06	215.55		-0.07	0.04	
30-34	-0.14	0.03	***	-0.09	0.03	**	-0.18	0.02	***	0.00	0.02		-0.05	0.05		0.06	215.55		-0.12	0.04	**
35-39	-0.09	0.03	***	-0.06	0.03		-0.06	0.02	***	0.06	0.02	**	0.00	0.04		0.12	215.55		0.04	0.04	
40-44	0.04	0.02		0.10	0.03	**	0.07	0.02	***	0.13	0.02	***	0.08	0.04		0.16	215.55		0.15	0.03	***
45-49	0.10	0.02	***	0.19	0.03	***	0.14	0.02	***	0.21	0.02	***	0.07	0.04		0.26	215.55		0.17	0.03	***
50-54	0.17	0.02	***	0.24	0.03	***	0.21	0.02	***	0.24	0.02	***	0.09	0.05	*	0.31	215.55		0.25	0.03	***
55-59	0.18	0.03	***	0.22	0.03	***	0.24	0.02	***	0.19	0.02	***	0.13	0.05	**	0.28	215.55		0.28	0.04	***
60-64	0.11	0.03	***	0.15	0.04	***	0.16	0.02	***	0.13	0.02	***	0.03	0.05		0.19	215.55		0.19	0.04	***
65-69	0.05	0.03		0.01	0.04		0.11	0.02	***	-0.05	0.03		-0.07	0.06		0.16	215.55		0.01	0.05	
70-74	0.06	0.03		-0.03	0.05		0.13	0.02	***	-0.03	0.03		-0.04	0.06		0.03	215.55		0.00	0.05	
75-79	0.23	0.04	***	-0.02	0.06		0.20	0.03	***	0.01	0.04		0.03	0.07		0.22	215.55		0.03	0.06	
80-84	0.31	0.05	***	0.07	0.08		0.24	0.04	***	-0.05	0.06		-0.01	0.09		-1.78	2802.11		-0.11	0.09	
Period Main Effects																					
1950-1954	0.22	0.04	***	-0.24	0.07	***	-0.09	0.03	**	-0.74	0.04	***	-0.37	0.07	***	0.08	215.55		-0.51	0.06	***
1955-1959	0.03	0.04		-0.05	0.05		-0.02	0.03		-0.57	0.04	***	-0.16	0.06	**	-0.08	215.55		-0.52	0.07	***
1960-1964	0.06	0.04		-0.02	0.05		0.01	0.02		-0.54	0.04	***	-0.06	0.06		-0.01	215.55		-0.27	0.06	***
1965-1969	0.22	0.03	***	0.01	0.05		0.15	0.02	***	-0.35	0.04	***	-0.18	0.06	**	0.21	215.55		-0.20	0.05	***
1970-1974	0.25	0.03	***	-0.13	0.05	*	0.28	0.02	***	-0.07	0.03	*	0.10	0.06		0.20	215.55		-0.05	0.05	
1975-1979	0.23	0.03	***	-0.59	0.06	***	0.30	0.02	***	0.03	0.03		0.20	0.05	***	-1.41	2802.11		0.10	0.05	*
1980-1984	0.12	0.03	***	0.32	0.03	***	0.25	0.02	***	0.38	0.02	***	0.32	0.05	***	0.31	215.55		0.24	0.04	***
1985-1989	0.02	0.03		0.29	0.03	***	0.15	0.02	***	0.37	0.02	***	0.13	0.05	**	0.33	215.55		0.21	0.04	***
1990-1994	-0.02	0.03		0.29	0.03	***	-0.02	0.02		0.41	0.02	***	0.15	0.05	**	0.18	215.55		0.25	0.04	***
1995-1999	-0.14	0.03	***	0.18	0.03	***	-0.10	0.02	***	0.51	0.02	***	0.05	0.05		0.12	215.55		0.23	0.04	***
2000-2004	-0.20	0.03	***	0.05	0.03		-0.28	0.02	***	0.35	0.02	***	-0.17	0.06	**	0.02	215.55		0.09	0.04	*
2005-2009	-0.27	0.03	***	-0.09	0.03	**	-0.25	0.02	***	0.17	0.02	***	-0.08	0.05		0.03	215.55		0.10	0.04	*
2010-2014	-0.20	0.02	***	-0.04	0.03		-0.19	0.02	***	0.11	0.02	***	-0.10	0.05	*	-0.03	215.55		0.11	0.04	**
2015-2019	-0.34	0.02	***	0.04	0.03		-0.19	0.02	***	-0.07	0.02	***	0.17	0.04	***	0.06	215.55		0.21	0.03	***

Table 32: Estimated age and period main coefficients from the Poisson APC-I model, for males.
*Notes: Coef. refers to coefficients. Sig. refers to significance levels. p-value: * < 0.05, ** < 0.01, *** < 0.001. See Table 49 for the confidence intervals.*

	British Columbia			Alberta			Ontario			Québec			Saskatchewan			Manitoba			Atlantic		
	Coefficient	SE	Sig.	Coefficient	SE	Sig.	Coefficient	SE	Sig.	Coefficient	SE	Sig.	Coefficient	SE	Sig.	Coefficient	SE	Sig.	Coefficient	SE	Sig.
Intercept	-9.50	0.02	***	-9.68	215.55		-9.71	0.01	***	-9.87	215.55		-10.95	1757.75		-10.04	615.53		-11.17	1550.19	
Age Main Effects																					
15-19	-0.82	0.08	***	-0.56	215.55		-0.81	0.05	***	-0.72	215.55		-0.67	7795.12		0.21	615.53		-1.40	7750.95	
20-24	-0.37	0.06	***	-0.08	215.55		-0.34	0.03	***	-0.09	215.55		-0.57	7795.12		0.33	615.53		0.58	1550.19	
25-29	-0.22	0.05	***	-0.07	215.55		-0.16	0.03	***	0.14	215.55		1.26	1757.75		0.53	615.53		0.72	1550.19	
30-34	-0.10	0.05	*	0.12	215.55		-0.09	0.03	**	0.26	215.55		1.27	1757.75		0.45	615.53		0.93	1550.19	
35-39	0.04	0.04		0.31	215.55		0.07	0.03	**	0.42	215.55		1.34	1757.75		0.60	615.53		1.20	1550.19	
40-44	0.16	0.04	***	0.50	215.55		0.20	0.03	***	0.54	215.55		1.29	1757.75		0.47	615.53		1.19	1550.19	
45-49	0.30	0.04	***	0.46	215.55		0.39	0.03	***	0.66	215.55		1.40	1757.75		0.52	615.53		1.26	1550.19	
50-54	0.41	0.04	***	0.54	215.55		0.43	0.03	***	0.65	215.55		1.53	1757.75		0.60	615.53		1.47	1550.19	
55-59	0.30	0.05	***	0.48	215.55		0.40	0.03	***	0.50	215.55		1.31	1757.75		0.42	615.53		1.34	1550.19	
60-64	0.21	0.05	***	0.12	215.55		0.26	0.03	***	0.34	215.55		1.13	1757.75		0.51	615.53		1.14	1550.19	
65-69	0.11	0.06		0.12	215.55		0.23	0.03	***	0.01	215.55		0.99	1757.75		0.47	615.53		0.85	1550.19	
70-74	-0.01	0.06		0.11	215.55		-0.05	0.04		-0.17	215.55		-1.09	7795.12		0.02	615.53		0.59	1550.19	
75-79	-0.04	0.08		-1.80	2802.11		-0.13	0.05	*	-0.53	215.55		-1.16	7795.12		-0.12	615.53		0.49	1550.19	
80-84	0.02	0.10		-0.25	215.55		-0.40	0.08	***	-2.02	2802.11		-8.04	17072.21		-5.00	8001.89		-10.36	18666.76	
Period Main Effects																					
1950-1954	0.20	0.09	*	-0.22	215.55		-0.16	0.07	*	-2.15	2802.11		-2.62	10882.92		-1.62	4647.15		-1.06	7750.95	
1955-1959	-0.15	0.09		-0.17	215.55		-0.20	0.06	***	-0.51	215.55		-0.62	7795.12		0.10	615.53		0.26	1550.19	
1960-1964	-0.05	0.08		-0.35	215.55		-0.06	0.05		-0.42	215.55		-2.60	10882.92		0.17	615.53		-1.06	7750.95	
1965-1969	0.42	0.06	***	-1.59	2802.11		0.21	0.05	***	-0.10	215.55		0.95	1757.75		-1.29	4647.15		-0.95	7750.95	
1970-1974	0.60	0.05	***	0.31	215.55		0.55	0.03	***	0.20	215.55		1.30	1757.75		0.65	615.53		-0.82	7750.95	
1975-1979	0.49	0.05	***	0.50	215.55		0.49	0.03	***	0.28	215.55		1.64	1757.75		0.74	615.53		-0.70	7750.95	
1980-1984	0.15	0.05	**	0.49	215.55		0.31	0.03	***	0.49	215.55		1.37	1757.75		0.35	615.53		0.91	1550.19	
1985-1989	-0.06	0.05		0.14	215.55		0.14	0.03	***	0.38	215.55		-0.51	7795.12		0.55	615.53		-0.78	7750.95	
1990-1994	-0.15	0.05	**	0.35	215.55		-0.13	0.03	***	0.33	215.55		-0.65	7795.12		0.16	615.53		-0.75	7750.95	
1995-1999	-0.33	0.05	***	0.13	215.55		-0.25	0.03	***	0.53	215.55		0.95	1757.75		0.12	615.53		0.79	1550.19	
2000-2004	-0.23	0.05	***	0.07	215.55		-0.34	0.03	***	0.32	215.55		0.69	1757.75		0.33	615.53		0.86	1550.19	
2005-2009	-0.29	0.05	***	0.08	215.55		-0.26	0.03	***	0.25	215.55		1.22	1757.75		0.38	615.53		0.84	1550.19	
2010-2014	-0.22	0.05	***	0.08	215.55		-0.18	0.03	***	0.22	215.55		-0.65	7795.12		-1.20	4647.15		1.09	1550.19	
2015-2019	-0.37	0.05	***	0.19	215.55		-0.13	0.03	***	0.16	215.55		-0.47	7795.12		0.56	615.53		1.36	1550.19	

Table 33: Estimated age and period main coefficients from the Poisson APC-I model, for females.

*Notes: Coef. refers to coefficients. Sig. refers to significance levels. p-value: * < 0.05, ** < 0.01, *** < 0.001. See Table 50 for the confidence intervals.*

	Period																					
	1950-1954		1955-1959		1960-1964		1965-1969		1970-1974		1975-1979		1980-1984		1985-1989		1990-1994		1995-1999		2000-2004	
Age Group	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
15-19	-0.89	***	-0.90	***	-0.84	***	-0.11		0.21	**	0.26	***	0.39	***	0.48	***	0.61	***	0.60	***	0.36	***
20-24	-0.71	***	-0.80	***	-0.38	***	0.08		0.26	***	0.47	***	0.27	***	0.26	***	0.39	***	0.29	***	0.18	***
25-29	-0.52	***	-0.20		-0.12		-0.02		0.08		0.22	***	0.21	***	0.20	***	0.18	***	0.17	***	0.08	
30-34	-0.29	*	-0.20	*	-0.22	*	-0.12		-0.09		0.20	***	0.06		0.15	**	0.21	***	0.21	***	0.14	**
35-39	-0.36	**	-0.18		-0.08		0.02		0.03		-0.01		-0.12	*	0.07		0.10	*	0.17	***	0.17	***
40-44	-0.17		-0.05		-0.03		0.00		-0.10		-0.08		-0.07		-0.09		-0.06		0.11	**	0.12	**
45-49	0.03		0.07		-0.07		0.05		-0.01		-0.15	*	-0.22	***	-0.21	***	-0.13	**	0.00		0.11	**
50-54	0.17		0.09		0.18		0.18	*	-0.03		-0.15	*	-0.20	***	-0.22	***	-0.21	***	-0.17	***	-0.02	
55-59	0.09		0.31	**	0.17		0.20	*	-0.01		-0.13		-0.10		-0.11		-0.21	***	-0.25	***	-0.16	**
60-64	0.53	***	0.61	***	0.47	***	-0.02		0.11		-0.12		-0.08		-0.25	***	-0.35	***	-0.33	***	-0.30	***
65-69	0.40	**	0.18		0.33	*	0.33	**	0.13		-0.08		-0.06		-0.11		-0.27	***	-0.25	***	-0.37	***
70-74	0.47	**	0.19		0.26		0.05		-0.04		-0.04		-0.04		0.03		-0.13		-0.11		-0.17	*
75-79	0.52	*	0.47	*	0.26		-0.42		-0.06		-0.18		-0.02		-0.11		-0.10		-0.12		0.02	
80-84	0.73	**	0.41		0.09		-0.22		-0.49		-0.21		0.00		-0.08		-0.03		-0.31	*	-0.18	

	Period																					
	2005-2009		2010-2014		2015-2019																	
Age Group	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.																
15-19	-0.02		-0.10		-0.05																	
20-24	0.00		-0.18	**	-0.14	*																
25-29	-0.04		-0.14	*	-0.09																	
30-34	0.05		0.02		-0.11																	
35-39	0.17	***	0.14	**	-0.10																	
40-44	0.27	***	0.16	**	0.00																	
45-49	0.18	***	0.22	***	0.13	*																
50-54	0.05		0.11	*	0.23	***																
55-59	-0.03		0.12	*	0.12	*																
60-64	-0.30	***	-0.15	*	-0.09		-0.01															
65-69	-0.37	***	-0.16	*	-0.14	*	0.07															
70-74	-0.17	*	-0.19	*	-0.12		-0.17	*														
75-79	-0.14		-0.08		-0.05																	
80-84	0.03		0.08		-0.18																	

Table 34: APC-I estimated age-by-period interaction terms for males in Québec.

	Period																					
	1950-1954		1955-1959		1960-1964		1965-1969		1970-1974		1975-1979		1980-1984		1985-1989		1990-1994		1995-1999		2000-2004	
Age Group	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
15-19	-0.47	***	-0.97	***	-0.54	***	-0.44	***	0.10		0.22	***	0.29	***	0.30	***	0.23	***	0.32	***	0.34	***
20-24	-0.59	***	-0.35	***	-0.28	**	-0.19	**	0.12	*	0.29	***	0.16	***	0.12	*	0.16	**	0.07		0.09	
25-29	-0.47	***	-0.27	**	-0.26	**	-0.09		-0.02		0.21	***	0.17	***	0.19	***	0.17	***	0.13	*	0.10	
30-34	-0.25	**	-0.37	***	-0.16	*	-0.15	*	-0.22	***	-0.02		0.00		0.20	***	0.19	***	0.19	***	0.26	***
35-39	-0.20	*	-0.15	*	-0.06		-0.17	*	0.03		-0.05		-0.24	***	-0.03		0.16	***	0.20	***	0.17	***
40-44	0.26	***	-0.18	*	-0.08		-0.02		0.12	*	-0.03		-0.20	***	-0.19	***	-0.03		0.07		0.09	
45-49	-0.18	*	0.16	*	0.02		-0.01		0.00		-0.01		-0.08		-0.25	***	-0.11	*	-0.05		0.06	
50-54	0.23	**	0.17	*	0.19	**	0.13	*	0.00		-0.05		-0.12	*	-0.23	***	-0.29	***	-0.14	**	-0.03	
55-59	0.25	**	0.37	***	0.25	***	0.30	***	-0.01		-0.14	*	-0.10		-0.27	***	-0.29	***	-0.23	***	-0.13	*
60-64	0.43	***	0.42	***	0.41	***	0.32	***	0.09		-0.14	*	-0.17	**	-0.24	***	-0.17	**	-0.35	***	-0.21	**
65-69	0.48	***	0.51	***	0.12		0.14		0.07		-0.10		-0.06		0.04		-0.15	*	-0.23	**	-0.14	
70-74	0.35	***	0.27	**	0.08		0.23	**	0.09		0.01		0.13		0.18	**	-0.19	*	-0.07		-0.25	**
75-79	0.44	***	0.18		0.31	**	-0.02		-0.07		-0.13		0.09		-0.04		0.13		-0.15		-0.26	**
80-84	-0.27		0.21		0.00		-0.04		-0.30	*	-0.07		0.13		0.22	*	0.19		0.24	*	-0.09	

	Period																					
	2005-2009		2010-2014		2015-2019																	
Age Group	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.																
15-19	0.07		0.25	***	0.31	***																
20-24	0.14	*	0.11	*	0.14	**																
25-29	-0.02		0.01		0.14	**																
30-34	0.10		0.02		0.20	***																
35-39	0.14	**	0.07		0.11	*																
40-44	0.16	***	0.02		0.03																	
45-49	0.17	***	0.11	**	0.15	***																
50-54	0.08		0.10	*	-0.02																	
55-59	-0.06		0.01		0.04																	
60-64	-0.21	**	-0.15	**	-0.02																	
65-69	-0.27	***	-0.18	**	-0.23	***																
70-74	-0.25	**	-0.27	***	-0.14	*	-0.41	***														
75-79	0.00		-0.18	*	-0.30	***																
80-84	-0.02		-0.04		0.15																	

Table 35: APC-I estimated age-by-period interaction terms for males in Ontario.

	Period																							
	1950-1954		1955-1959		1960-1964		1965-1969		1970-1974		1975-1979		1980-1984		1985-1989		1990-1994		1995-1999		2000-2004		2005-2009		2010-2014		2015-2019	
Age Group	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
15-19	-0.60	**	-0.79	**	-0.36	*	-0.22		-0.16		0.43	***	0.42	***	0.40	***	0.37	***	0.06		0.13		-0.09		0.08		0.34	***
20-24	-0.62	***	-0.40	**	-0.23		-0.11		0.26	***	0.37	***	0.17	*	0.27	***	0.21	**	0.14		0.13		0.06		-0.16		-0.09	
25-29	-0.55	***	-0.22		-0.44	**	-0.03		0.07		0.21	**	0.22	**	0.25	***	0.23	**	0.11		0.10		0.03		-0.09		0.13	
30-34	-0.12		-0.46	**	-0.11		-0.15		-0.02		-0.06		0.20	**	0.08		0.28	***	0.22	**	0.09		-0.04		0.09		0.00	
35-39	-0.43	**	-0.24		-0.15		-0.01		0.10		-0.16		-0.03		-0.09		0.24	***	0.21	**	0.37	***	0.16	*	0.12		-0.08	
40-44	0.09		-0.10		0.06		-0.03		-0.01		-0.03		-0.12		-0.13		0.08		0.07		0.09		0.18	*	-0.05		-0.10	
45-49	0.04		-0.01		0.08		-0.16		0.08		0.05		-0.37	***	0.05		-0.14		-0.01		0.05		0.10		0.05		0.19	**
50-54	0.29	**	0.16		0.19		-0.08		0.09		0.00		-0.14		-0.19	*	-0.26	**	-0.03		0.04		-0.02		0.00		-0.05	
55-59	0.17		0.36	**	0.18		0.04		-0.12		-0.11		-0.08		-0.11		-0.29	**	-0.28	**	-0.08		0.09		0.12		0.11	
60-64	0.60	***	0.31	*	0.30	*	0.11		-0.08		-0.17		-0.11		-0.18		-0.36	***	-0.04		-0.09		-0.15		-0.05		-0.08	
65-69	0.27	*	0.51	***	0.32	*	0.06		-0.14		0.05		-0.10		-0.11		-0.11		-0.24	*	-0.19		-0.08		-0.19	*	-0.03	
70-74	0.26		0.32	*	0.12		0.27	*	0.05		-0.16		-0.08		-0.02		-0.26	*	-0.05		-0.11		-0.15		-0.06		-0.12	
75-79	0.31		0.25		0.43	**	0.22		-0.07		-0.17		-0.12		-0.09		-0.22		-0.20		-0.17		-0.06		-0.06		-0.06	
80-84	0.29		0.31		-0.38		0.09		-0.05		-0.23		0.14		-0.12		0.23		0.05		-0.34	*	-0.01		0.19		0.16	

Table 36: APC-I estimated age-by-period interaction terms for males in British Columbia.

	Period																							
	1950-1954		1955-1959		1960-1964		1965-1969		1970-1974		1975-1979		1980-1984		1985-1989		1990-1994		1995-1999		2000-2004		2005-2009		2010-2014		2015-2019	
Age Group	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
15-19	-1.46	***	-1.06	***	-0.57	**	-0.03		0.43	***	0.22		0.43	***	0.45	***	0.39	***	0.34	***	0.14		0.23	*	0.38	***	0.11	
20-24	-0.61	**	-0.93	***	-0.39	*	0.11		0.30	**	0.27	*	0.09		0.13		0.28	***	0.32	***	0.06		0.06		0.18	*	0.12	
25-29	-0.68	**	-0.24		-0.14		-0.11		-0.03		0.27	*	0.04		0.01		0.38	***	0.12		0.02		0.01		0.12		0.23	**
30-34	-0.25		-0.21		0.02		-0.03		0.11		-0.28		0.07		0.05		0.21	**	0.29	***	0.12		-0.12		-0.04		0.05	
35-39	-0.23		-0.11		-0.18		-0.02		-0.01		0.25		-0.19	*	-0.09		0.15	*	0.17	*	0.25	***	0.10		-0.15		0.06	
40-44	0.00		0.05		-0.09		0.02		0.02		0.28	*	-0.18		-0.18	*	-0.16		0.05		0.16	*	0.08		0.00		-0.06	
45-49	0.38	**	0.00		-0.14		-0.02		0.08		0.03		-0.07		-0.16		-0.21	*	-0.12		0.09		0.09		0.04		0.02	
50-54	0.48	***	0.25		-0.08		0.06		-0.03		-0.07		-0.11		-0.18		-0.18		-0.15		0.04		0.01		0.02		-0.07	
55-59	0.24		0.19		0.22		0.27	*	0.10		-0.29		-0.15		-0.10		-0.16		-0.07		-0.04		-0.03		-0.09		-0.09	
60-64	0.44	**	0.37	*	0.55	***	0.00		0.04		-0.19		-0.17		-0.11		-0.18		-0.45	***	-0.21		-0.25	*	0.03		0.12	
65-69	0.48	**	0.47	**	0.39	*	-0.11		0.09		0.02		-0.10		-0.20		-0.25		-0.05		-0.28	*	-0.11		-0.22		-0.12	
70-74	0.70	***	0.17		-0.14		-0.19		-0.02		-0.55		0.28	*	0.12		-0.21		-0.03		-0.16		0.01		0.09		-0.07	
75-79	0.50		0.68	**	0.56	**	0.06		-0.59		0.01		-0.07		0.09		0.02		-0.53	*	-0.05		0.00		-0.43	*	-0.24	
80-84	0.02		0.38		-0.01		0.01		-0.49		0.02		0.12		0.16		-0.08		0.10		-0.14		-0.08		0.06		0.07	

Table 37: APC-I estimated age-by-period interaction terms for males in Alberta.

	Period																							
	1950-1954		1955-1959		1960-1964		1965-1969		1970-1974		1975-1979		1980-1984		1985-1989		1990-1994		1995-1999		2000-2004		2005-2009		2010-2014		2015-2019	
Age Group	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
15-19	-0.89		-1.50		-0.97		-0.67		-0.05		2.04		0.16		0.12		0.14		0.33		0.46		0.35		0.21		0.27	
20-24	-0.30		-1.19		-0.38		-0.16		0.04		1.85		0.17		0.09		0.09		-0.12		0.01		0.02		-0.40		0.27	
25-29	-0.62		-0.54		-0.34		-0.50		-0.06		1.88		0.08		0.11		-0.02		-0.05		-0.09		0.13		-0.20		0.22	
30-34	-0.64		0.07		-0.16		-0.03		-0.06		1.26		-0.08		-0.26		0.03		-0.15		-0.05		-0.06		0.06		0.10	
35-39	-0.31		-0.07		-0.31		-0.27		0.05		1.65		-0.20		-0.38		-0.06		0.07		-0.09		-0.11		0.08		-0.08	
40-44	-0.54		0.04		-0.09		0.00		-0.22		1.52		-0.69		-0.23		-0.15		-0.14		0.05		0.15		0.05		0.25	
45-49	-0.15		-0.15		0.28		-0.26		0.02		1.72		-0.15		-0.55		-0.24		-0.22		-0.26		0.11		0.11		-0.27	
50-54	-0.04		0.20		0.17		-0.19		0.00		1.79		-0.51		-0.43		-0.16		-0.58		-0.11		0.00		0.06		-0.20	
55-59	0.36		0.32		0.25		-0.24		0.03		1.65		-0.34		-0.75		-0.27		-0.20		-0.19		-0.66		-0.03		0.06	
60-64	0.07		0.37		-0.04		0.19		0.23		1.53		-0.25		-0.11		-0.65		-0.34		-0.30		-0.50		-0.30		0.11	
65-69	0.53		0.52		0.24		0.29		0.04		1.65		-0.36		0.00		-0.24		-0.58		-0.86		-0.36		-0.52		-0.35	
70-74	0.27		0.30		0.16		0.07		0.01		1.83		-0.28		-0.03		-0.16		-0.02		0.08		-0.42		-0.74		-1.06	
75-79	0.27		0.38		-0.46		-0.32		0.11		0.41		0.30		0.23		-0.37		-0.08		-0.25		-0.02		-0.14		-0.05	
80-84	2.00		1.25		1.64		2.08		-0.11		-20.76		2.13		2.19		2.05		2.08		1.61		1.37		1.75		-0.73	

Table 38: APC-I estimated age-by-period interaction terms for males in Manitoba.

	Period																							
	1950-1954		1955-1959		1960-1964		1965-1969		1970-1974		1975-1979		1980-1984		1985-1989		1990-1994		1995-1999		2000-2004		2005-2009		2010-2014		2015-2019	
Age Group	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
15-19	-1.41	***	-1.28	***	-0.66	**	-0.22		-0.11		0.54	***	0.53	***	0.30	*	0.58	***	0.25		0.35	*	0.58	***	0.01		0.52	***
20-24	-0.43	*	-0.61	**	-0.56	**	-0.22		-0.05		0.24	*	0.10		0.16		0.20		0.33	**	0.28	*	0.23		0.15		0.17	
25-29	-0.39		-0.48	*	-0.21		-0.02		-0.15		0.09		0.07		0.02		0.16		0.29	*	0.20		0.12		0.21		0.09	
30-34	-0.54	*	-0.23		0.04		-0.11		0.00		-0.15		-0.10		0.22		0.06		0.24		0.20		0.10		0.25		0.01	
35-39	-0.26		0.06		-0.55	**	0.25		0.13		-0.11		0.10		-0.30		-0.23		0.25	*	0.41	**	0.14		0.17		-0.08	
40-44	0.35	*	-0.01		-0.21		-0.30		0.29	*	-0.23		-0.27		-0.02		-0.20		0.10		0.20		0.03		0.22		0.05	
45-49	0.14		-0.19		0.33	*	0.43	**	0.05		-0.37	*	-0.25		-0.34		-0.18		-0.13		0.22		0.02		0.10		0.16	
50-54	0.07		-0.05		0.28		0.12		0.13		-0.13		-0.01		-0.03		-0.24		0.01		0.08		0.06		-0.26		-0.02	
55-59	0.31		0.51	**	0.17		0.37	*	0.05		-0.07		-0.22		0.00		0.23		-0.76	**	-0.11		-0.46	*	0.03		-0.05	
60-64	0.71	***	0.60	***	0.27		-0.05		-0.01		0.28		-0.23		-0.08		0.00		-0.01		-0.37		-0.44	*	-0.49	*	-0.16	
65-69	0.67	***	0.54	**	0.48	*	0.66	***	-0.11		-0.09		-0.08		-0.27		0.10		-0.47		-0.62	*	-0.23		-0.39		-0.19	
70-74	0.52	*	0.09		0.40	*	-0.51		0.06		0.01		0.14		-0.22		-0.39		0.08		0.12		-0.17		0.01		-0.15	
75-79	0.05		0.35		-0.28		0.07		0.02		0.12		0.28		0.17		0.10		-0.42		-0.15		0.11		-0.36		-0.05	
80-84	0.18		0.70	*	0.50		-0.47		-0.32		-0.13		-0.07		0.40		-0.18		0.25		-0.82		-0.07		0.35		0.31	

Table 39: APC-I estimated age-by-period interaction terms for males in Saskatchewan.

	Period																							
	1950-1954		1955-1959		1960-1964		1965-1969		1970-1974		1975-1979		1980-1984		1985-1989		1990-1994		1995-1999		2000-2004		2005-2009		2010-2014		2015-2019	
Age Group	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
15-19	-0.76	*	-0.66	*	-0.42	*	-0.56	**	-0.12		0.23	*	0.17		0.32	**	0.43	***	0.21		0.09		0.38	**	0.47	***	0.21	
20-24	-1.07	***	-0.53	*	-0.27		-0.17		0.25	*	0.38	***	0.36	***	0.27	**	0.21	*	0.04		0.09		0.06		0.05		0.32	**
25-29	-0.70	**	0.02		-0.12		-0.08		-0.04		0.06		-0.09		-0.01		0.18	*	0.15		0.16		0.20		0.07		0.22	*
30-34	-0.61	**	-0.26		-0.06		0.06		0.43	***	0.25	*	-0.02		-0.14		0.09		0.17		0.05		0.02		-0.02		0.05	
35-39	-0.09		-0.58	**	0.04		0.21		0.30	*	-0.02		-0.26	*	-0.30	**	0.06		0.18	*	0.15		0.32	***	-0.11		0.11	
40-44	-0.12		-0.08		0.24		0.01		0.00		0.09		-0.22		-0.27	*	-0.12		0.01		0.17		0.04		0.16		0.12	
45-49	-0.04		0.22		-0.05		0.15		-0.08		-0.05		-0.05		-0.24	*	-0.11		-0.09		0.00		0.02		0.27	**	0.05	
50-54	0.27		0.14		0.03		0.15		0.05		-0.20		0.01		-0.14		-0.22		-0.10		-0.08		-0.06		0.17	*	-0.03	
55-59	0.18		0.37	*	-0.13		0.20		0.15		-0.14		-0.09		0.08		-0.14		-0.29	*	-0.17		-0.01		0.03		-0.04	
60-64	0.25		0.63	***	0.06		0.17		0.12		0.16		-0.19		-0.20		-0.13		-0.23		-0.14		-0.26	*	-0.12		-0.14	
65-69	0.45	*	0.44	*	0.20		0.15		0.04		-0.10		-0.10		0.04		-0.03		-0.08		-0.22		-0.30	*	-0.14		-0.36	**
70-74	0.30		0.18		0.18		-0.05		0.13		-0.02		0.06		0.09		0.00		-0.24		0.03		0.01		-0.14		-0.52	***
75-79	0.82	***	0.68	**	0.14		-0.04		-0.66	*	-0.59	*	-0.16		0.14		-0.08		0.11		-0.10		0.13		-0.13		-0.26	
80-84	1.12	***	-0.58		0.16		-0.19		-0.57		-0.05		0.57	*	0.35		-0.12		0.17		-0.03		-0.54		-0.55	*	-0.27	

Table 40: APC-I estimated age-by-period interaction terms for males in Atlantic Canada.

	Period																							
	1950-1954		1955-1959		1960-1964		1965-1969		1970-1974		1975-1979		1980-1984		1985-1989		1990-1994		1995-1999		2000-2004		2005-2009		2010-2014		2015-2019	
Age Group	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
15-19	0.17		-1.30		-0.52		-0.72		0.02		-0.10		-0.33		0.17		0.46		0.70		0.78		0.37		0.15		0.15	
20-24	1.38		-0.59		-0.12		-0.10		-0.16		0.12		-0.20		-0.21		-0.11		-0.12		0.07		0.13		-0.10		0.03	*
25-29	1.46		-0.22		-0.21		0.12		0.15		0.24		-0.03		-0.12		-0.20		-0.18		-0.26		-0.37		-0.06		-0.31	
30-34	1.27		0.05		-0.14		0.19		-0.04		0.07		-0.06		0.05		0.00		-0.23		-0.24		-0.44		-0.17		-0.31	
35-39	1.17		0.10		-0.19		0.08		-0.09		0.06		-0.18		0.06		-0.08		-0.08		0.09		-0.22		-0.30		-0.41	
40-44	1.69		-0.42		-0.06		-0.19		-0.18		-0.20		-0.02		-0.07		0.01		0.04		-0.12		-0.05		-0.19		-0.26	
45-49	1.78		-0.01		-0.06		-0.28		-0.18		-0.35		-0.19		-0.05		-0.18		-0.08		0.02		-0.06		-0.07		-0.27	*
50-54	1.54		0.06		-0.04		0.11		-0.35		-0.14		-0.19		-0.28		-0.25		-0.30		-0.03		-0.06		-0.05		-0.03	***
55-59	1.36		0.16		-0.28		0.30		-0.26		0.02		-0.04		-0.38		-0.28		-0.29		-0.27		0.02		0.03		-0.08	*
60-64	2.30		0.23		-0.04		-0.21		-0.19		-0.19		-0.14		-0.28		-0.44		-0.35		-0.39		-0.23		-0.03		-0.03	
65-69	1.24		0.17		-0.42		0.02		0.33		-0.10		-0.18		-0.03		-0.38		-0.20		0.01		-0.27		-0.06		-0.15	
70-74	1.50		-0.06		0.03		-0.31		-0.04		0.13		0.13		-0.49		0.07		-0.12		-0.37		-0.07		-0.35		-0.07	*
75-79	2.34		-0.14		-0.03		-0.54		-0.72		-0.99		-0.09		0.34		-0.19		-0.03		-0.23		0.06		0.24		-0.02	
80-84	-19.22		1.98		2.08		1.53		1.72		1.46		1.52		1.28		1.57		1.23		0.94		1.19		0.97		-1.76	

Table 41: APC-I estimated age-by-period interaction terms for females in Québec.

	Period																							
	1950-1954		1955-1959		1960-1964		1965-1969		1970-1974		1975-1979		1980-1984		1985-1989		1990-1994		1995-1999		2000-2004		2005-2009		2010-2014		2015-2019	
Age Group	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
15-19	-0.43		-0.92	**	-0.44	*	-0.54	**	-0.40	**	-0.03		-0.24		-0.05		0.28	*	0.34	**	0.50	***	0.53	***	0.45	***	0.95	***
20-24	-0.12		-0.29		0.00		-0.12		-0.30	**	-0.01		-0.10		0.01		-0.02		-0.12		0.28	**	0.12		0.26	**	0.40	***
25-29	-0.03		-0.29		-0.03		-0.01		0.09		0.06		-0.12		-0.02		-0.17		-0.01		0.08		-0.07		0.20	*	0.32	***
30-34	-0.27		-0.13		0.29	**	0.14		0.14		-0.21	*	-0.22	*	0.03		-0.03		0.03		0.06		-0.02		0.04		0.14	
35-39	-0.19		-0.06		-0.02		0.14		0.11		-0.01		0.01		-0.11		0.15		0.17	*	0.01		-0.01		0.00		-0.18	*
40-44	-0.03		0.04		-0.18		0.25	**	0.19	*	0.06		0.09		-0.16		-0.08		0.09		-0.04		0.10		-0.09		-0.24	**
45-49	0.12		0.09		-0.03		0.25	**	0.11		0.04		-0.07		-0.03		-0.20	*	0.12		0.03		-0.07		-0.21	**	-0.15	
50-54	0.00		0.13		0.13		0.24	**	0.13		-0.02		-0.04		-0.12		-0.17		-0.23	*	-0.07		-0.06		0.05		0.04	
55-59	0.20		0.16		0.25	*	0.13		0.09		-0.04		0.04		-0.10		-0.25	*	-0.21		-0.08		-0.12		0.07		-0.13	
60-64	0.28		0.60	***	-0.07		0.28	*	0.09		0.05		0.09		-0.11		-0.16		-0.29	*	-0.21		-0.18		-0.17		-0.19	*
65-69	0.65	***	0.22		0.21		-0.02		-0.01		0.15		0.22	*	0.10		-0.16		-0.17		-0.14		-0.21		-0.52	***	-0.33	***
70-74	0.26		0.25		0.05		0.12		0.04		-0.11		0.06		0.10		0.05		-0.07		-0.13		-0.19		-0.15		-0.28	*
75-79	0.21		-0.12		-0.14		0.04		-0.32		-0.06		-0.04		0.32	*	0.33	*	0.24		-0.30		-0.08		-0.08		0.01	
80-84	-0.65		0.33		-0.02		-0.90	*	0.06		0.12		0.34		0.12		0.44	*	0.12		0.01		0.25		0.15		0.37	

Table 42: APC-I estimated age-by-period interaction terms for females in Ontario.

	Period																							
	1950-1954		1955-1959		1960-1964		1965-1969		1970-1974		1975-1979		1980-1984		1985-1989		1990-1994		1995-1999		2000-2004		2005-2009		2010-2014		2015-2019	
Age Group	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
15-19	-0.37		-0.76		-0.62		-0.94	**	-0.06		0.09		0.03		-0.02		0.40	*	0.30		0.27		0.37		0.65	***	0.65	***
20-24	0.28		-0.66		-0.56		-0.05		0.06		0.09		0.04		0.07		0.26		-0.08		-0.11		-0.24		0.49	***	0.42	**
25-29	-0.47		-0.15		-0.08		-0.07		0.11		-0.02		0.07		0.02		0.12		-0.10		0.09		0.29		-0.05		0.26	
30-34	-0.24		0.23		-0.08		0.10		-0.02		0.03		0.16		-0.31		0.14		-0.20		-0.03		0.17		0.19		-0.14	
35-39	0.22		0.09		-0.37		0.09		0.12		-0.03		-0.24		0.01		0.21		-0.03		0.19		0.01		-0.15		-0.10	
40-44	0.23		0.23		0.10		0.13		-0.14		0.04		-0.53	**	-0.04		-0.03		0.01		-0.02		0.17		0.01		-0.17	
45-49	-0.09		0.23		0.15		0.30	*	0.30	**	0.09		-0.21		-0.04		-0.35	*	-0.15		-0.02		-0.03		-0.06		-0.13	
50-54	0.07		0.37		0.41	*	0.10		0.01		-0.02		-0.05		-0.22		-0.20		-0.19		-0.02		-0.07		-0.11		-0.06	
55-59	0.39		0.18		0.28		0.16		0.22		0.00		-0.13		-0.36		-0.06		-0.17		-0.12		-0.15		-0.08		-0.16	
60-64	0.28		0.21		0.12		0.00		-0.11		-0.03		0.01		-0.25		-0.14		-0.01		0.06		-0.07		-0.18		0.10	
65-69	0.01		-0.59		0.56	*	0.35		0.11		0.08		0.08		0.20		0.17		-0.42		-0.27		0.15		-0.20		-0.24	
70-74	-0.01		0.24		0.18		-0.17		-0.02		-0.23		0.15		0.28		0.04		0.27		-0.07		-0.04		-0.31		-0.32	
75-79	-0.13		0.13		0.12		0.43		0.20		0.00		0.32		0.09		-0.67	*	0.22		0.03		-0.56		-0.09		-0.09	
80-84	-0.17		0.25		-0.21		-0.42		-0.78		-0.08		0.29		0.57	*	0.11		0.53	*	0.02		0.00		-0.11		0.01	

Table 43: APC-I estimated age-by-period interaction terms for females in British Columbia.

	Period																							
	1950-1954		1955-1959		1960-1964		1965-1969		1970-1974		1975-1979		1980-1984		1985-1989		1990-1994		1995-1999		2000-2004		2005-2009		2010-2014		2015-2019	
Age Group	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
15-19	F		-1.13		-1.19		0.20		0.45		0.16		-0.07		0.17		0.52		0.46		0.34		0.62		0.69		0.43	
20-24	-0.22		-0.92		-0.29		1.64		0.05		0.04		-0.45		-0.15		0.03		-0.43		0.11		0.13		0.07		0.40	
25-29	-1.12		-0.41		0.24		1.77		-0.07		-0.56		-0.27		0.05		-0.15		0.16		-0.19		0.04		0.19		0.31	
30-34	0.13		-0.61		-0.83		1.44		0.18		-0.17		-0.02		0.12		-0.02		0.09		0.10		-0.23		-0.08		-0.10	
35-39	-0.04		-0.10		-0.42		1.70		-0.10		-0.37		-0.12		0.05		-0.13		-0.02		0.08		-0.09		-0.10		-0.35	
40-44	0.11		-0.63		-0.13		1.85		0.04		-0.03		-0.17		-0.06		-0.23		0.07		-0.22		-0.22		-0.11		-0.26	
45-49	-0.14		-0.29		-0.02		1.56		-0.09		-0.19		-0.09		-0.06		-0.31		-0.35		0.17		0.01		0.03		-0.22	
50-54	0.36		0.29		-0.77		1.17		-0.18		0.02		-0.10		-0.44		-0.05		0.02		0.17		-0.09		-0.21		-0.19	
55-59	0.17		0.39		0.20		1.59		-0.24		-0.12		-0.16		-0.22		-0.35		-0.71		-0.30		-0.10		0.04		-0.18	
60-64	-0.71		0.54		0.43		1.84		-0.47		-0.37		0.14		-0.28		-0.42		-0.34		-0.11		-0.44		0.15		0.05	
65-69	0.56		0.22		0.48		1.39		-0.37		-0.40		0.26		0.01		-0.08		-0.12		-0.19		-0.55		-0.72		-0.48	
70-74	0.20		-0.07		0.27		2.10		-0.08		0.20		-0.13		-0.06		-0.36		0.02		-0.58		-0.55		-0.33		-0.63	
75-79	1.59		1.22		1.82		-20.08		1.83		1.44		1.56		2.24		1.75		1.00		0.93		1.61		1.46		1.63	
80-84	0.76		1.49		0.20		1.84		-0.95		0.34		-0.37		-1.37		-0.19		0.17		-0.32		-0.13		-1.07		0.39	

Table 44: APC-I estimated age-by-period interaction terms for females in Alberta.

	Period																							
	1950-1954		1955-1959		1960-1964		1965-1969		1970-1974		1975-1979		1980-1984		1985-1989		1990-1994		1995-1999		2000-2004		2005-2009		2010-2014		2015-2019	
Age Group	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
15-19	0.27		-2.22		-0.51		0.88		-0.51		-1.13		-1.26		-0.24		0.44		0.02		0.12		0.81		2.55		0.78	
20-24	0.79		-0.89		-1.28		1.11		-0.60		-0.65		-0.41		-0.58		-0.01		-0.18		0.15		-0.07		2.08		0.54	
25-29	0.93		-0.70		-0.30		0.88		-0.52		-0.56		-0.13		-0.55		0.14		0.11		-0.25		-0.56		1.39		0.12	
30-34	0.39		-0.68		-0.85		1.38		-0.35		-0.38		-0.27		-0.34		-0.44		-0.17		0.01		-0.05		1.54		0.21	
35-39	0.98		-1.21		0.08		1.82		-0.49		-0.49		-0.62		-0.37		-0.30		-0.32		0.02		-0.33		1.33		-0.09	
40-44	1.55		-0.18		-0.89		1.43		-0.11		-0.08		-0.38		-0.50		-0.69		-0.76		-0.39		-0.21		1.96		-0.75	
45-49	1.20		-0.09		-0.38		0.90		0.01		-0.16		0.16		-0.33		-0.53		-0.57		-0.51		-0.30		1.47		-0.88	
50-54	1.02		-0.22		0.10		1.52		0.02		-0.43		0.18		-0.85		-0.68		-0.56		-0.33		-0.49		1.15		-0.43	
55-59	1.69		-0.75		-0.40		2.00		-0.11		-0.42		-0.05		-0.09		-0.81		-0.62		-0.85		-0.48		1.31		-0.43	
60-64	1.33		-0.19		0.02		1.80		-0.38		-0.18		-0.26		-1.00		-0.92		-0.42		-0.29		-0.04		1.06		-0.53	
65-69	1.76		0.83		0.03		1.58		-0.14		-0.20		0.16		-0.60		-0.34		-1.48		-1.23		-0.66		1.02		-0.72	
70-74	1.60		0.79		0.23		0.24		-0.13		-0.04		0.19		0.42		-0.64		-0.11		-0.75		-1.85		0.76		-0.69	
75-79	2.69		0.31		-0.67		1.77		-1.33		-0.41		-1.30		0.29		-0.68		0.20		0.14		-0.54		0.69		-1.14	
80-84	-16.19		5.18		4.83		-17.29		4.64		5.14		4.01		4.72		5.47		4.86		4.16		4.76		-18.29		-4.00	

Table 45: APC-I estimated age-by-period interaction terms for females in Manitoba.

	Period																							
	1950-1954		1955-1959		1960-1964		1965-1969		1970-1974		1975-1979		1980-1984		1985-1989		1990-1994		1995-1999		2000-2004		2005-2009		2010-2014		2015-2019	
Age Group	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
15-19	-22.11		1.29		3.69		-0.25		0.04		0.72		0.70		2.36		2.35		0.99		1.77		1.52		3.53		3.41	
20-24	3.56		-24.04		2.95		0.37		0.55		0.88		0.64		2.58		2.72		0.83		1.07		1.45		3.10		3.34	
25-29	2.55		0.38		2.31		-1.94		-1.64		-1.68		-1.04		0.71		1.30		-0.93		-0.74		-0.97		0.55		1.13	
30-34	1.07		0.88		2.53		-2.32		-0.99		-1.07		-0.97		0.72		1.09		-1.44		-0.28		-0.81		0.64		0.96	
35-39	2.31		0.28		2.42		-1.04		-0.77		-0.98		-1.51		0.86		0.87		-0.91		-0.96		-0.87		0.21		0.12	
40-44	2.78		0.77		1.10		-0.47		-1.55		-1.30		-1.43		0.75		0.90		-0.87		-0.72		-1.33		0.98		0.38	
45-49	2.96		0.46		2.87		-0.63		-1.19		-1.69		-0.95		0.72		0.38		-1.16		-1.31		-1.44		0.58		0.42	
50-54	2.44		1.07		2.72		-0.86		-1.31		-1.38		-1.22		0.63		0.65		-0.80		-2.11		-1.27		0.82		0.61	
55-59	0.97		0.73		2.46		-0.16		-0.83		-1.06		-1.34		0.30		0.67		-1.29		-0.82		-1.01		0.67		0.71	
60-64	3.08		0.67		1.91		-0.06		-0.25		-1.48		-0.72		0.29		0.83		-1.04		-2.40		-1.98		0.52		0.62	
65-69	3.20		1.12		2.86		-1.02		-0.52		-0.62		-1.18		-0.45		0.63		-2.53		-0.59		-2.06		0.76		0.38	
70-74	4.70		3.42		5.09		0.13		0.44		0.63		1.13		3.27		1.17		0.68		-0.10		0.82		1.97		-23.35	
75-79	4.60		3.04		-20.19		0.44		0.06		0.74		0.83		2.81		2.11		0.46		0.05		0.66		1.49		2.90	
80-84	-12.10		9.93		-12.72		7.79		7.97		8.28		7.06		-15.57		-15.64		8.01		7.13		7.29		-15.80		-8.38	

Table 46: APC-I estimated age-by-period interaction terms for females in Saskatchewan.

	Period																							
	1950-1954		1955-1959		1960-1964		1965-1969		1970-1974		1975-1979		1980-1984		1985-1989		1990-1994		1995-1999		2000-2004		2005-2009		2010-2014		2015-2019	
Age Group	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
15-19	-23.41		0.16		2.60		1.76		1.77		2.71		1.20		2.19		3.00		1.54		1.30		1.53		1.92		1.73	
20-24	0.42		-1.19		-0.31		0.51		1.01		1.18		-0.87		0.78		1.14		-0.57		-0.94		-0.67		-0.42		-0.08	
25-29	0.32		-2.33		0.40		1.16		1.17		0.95		-1.27		1.17		1.10		-0.44		-0.53		-0.59		-0.56		-0.56	
30-34	0.15		-0.93		1.02		0.12		0.70		0.76		-1.05		1.05		0.98		-0.32		-0.48		-0.42		-0.54		-1.04	
35-39	0.34		-0.74		0.91		0.40		0.63		0.93		-0.92		1.00		0.98		-0.66		-0.81		-0.68		-0.47		-0.90	
40-44	0.34		-0.42		0.34		1.17		0.84		1.06		-1.42		0.85		0.81		-0.68		-0.47		-0.62		-0.86		-0.94	
45-49	0.66		-1.22		0.88		0.50		0.37		0.82		-0.80		0.85		0.81		-0.51		-0.59		-0.48		-0.39		-0.89	
50-54	0.83		-0.32		1.19		0.77		0.72		1.01		-1.15		0.94		0.10		-0.94		-0.72		-0.71		-0.82		-0.90	
55-59	0.59		-0.59		1.19		0.92		1.22		0.69		-0.72		0.98		0.73		-1.19		-1.17		-0.89		-0.60		-1.18	
60-64	1.65		-1.36		1.02		1.10		1.10		0.83		-0.87		0.99		0.80		-1.07		-1.27		-0.87		-0.98		-1.06	
65-69	1.37		-0.52		1.00		1.65		1.51		0.52		-0.65		1.06		1.37		-0.86		-2.20		-2.31		-1.12		-0.81	
70-74	1.62		-1.20		1.68		0.96		0.78		0.84		-0.56		0.81		1.28		-2.46		-0.45		-0.93		-1.13		-1.25	
75-79	2.32		-0.72		0.50		1.68		1.13		0.93		-0.29		0.70		0.52		-0.82		-1.19		-1.17		-2.57		-1.03	
80-84	12.81		11.38		-12.43		-12.69		-12.96		-13.22		9.37		-13.38		-13.62		8.99		9.50		8.81		8.54		-8.92	

Table 47: APC-I estimated age-by-period interaction terms for females in Atlantic Canada.

	Québec				Ontario				British Columbia				Alberta				Saskatchewan				Manitoba				Atlantic Canada			
cohort	Intra-cohort slope	Sig.	Inter-Cohort Deviation	Sig.	Intra-cohort slope	Sig.	Inter-Cohort Deviation	Sig.	Intra-cohort slope	Sig.	Inter-Cohort Deviation	Sig.	Intra-cohort slope	Sig.	Inter-Cohort Deviation	Sig.	Intra-cohort slope	Sig.	Inter-Cohort Deviation	Sig.	Intra-cohort slope	Sig.	Inter-Cohort Deviation	Sig.	Intra-cohort slope	Sig.	Inter-Cohort Deviation	Sig.
1870-1874	NA	NA	0.73	**	NA	NA	-0.27		NA	NA	0.29		NA	NA	0.02		NA	NA	0.18		NA	NA	2.00		NA	NA	1.12	***
1875-1879	-0.08		0.47	**	-0.16		0.32	**	0.00		0.31	*	-0.08		0.44		0.46		0.37		0.70		0.76		-0.99	*	0.12	
1880-1884	-0.27		0.34	**	-0.25		0.18	*	-0.45	*	0.04		-0.50		0.45	**	-0.02		0.46	**	0.97		0.76		-0.10		0.38	*
1885-1889	-0.40		0.16		-0.34	**	0.26	***	-0.10		0.28	***	-0.23		0.30	**	-0.85	*	0.00		0.87		0.61		-0.44		0.15	
1890-1894	-0.83	***	0.01		-0.63	***	0.14	**	-0.50	***	0.28	***	-0.72	*	0.07		-0.80	**	0.28	*	-0.38		0.06		-0.67	*	0.05	
1895-1899	-0.45	**	0.14	*	-0.36	***	0.15	***	-0.39	*	0.13	*	-0.54		0.04		-0.59	*	0.13		-12.74		-3.27		-0.63	*	0.04	
1900-1904	-0.38	**	0.15	**	-0.30	***	0.18	***	-0.33	*	0.15	**	-0.38		0.18	*	-0.27		0.23	**	1.28		0.44		-0.18		0.14	
1905-1909	-0.14		0.03		0.11		0.12	***	-0.29	*	-0.01		-0.42	*	0.06		0.23		0.10		1.66		0.60		0.11		0.04	
1910-1914	-0.09		0.01		-0.18	*	0.13	***	-0.03		0.04		0.06		0.06		-0.23		0.09		1.61		0.34		-0.06		0.05	
1915-1919	-0.01		-0.09	**	0.35	***	0.01		0.16		-0.11	**	0.19		-0.02		0.12		0.06		1.00		0.27		0.13		0.03	
1920-1924	0.02		-0.11	***	0.04		-0.11	***	-0.19		-0.14	***	-0.19		-0.19	***	-0.54		-0.21	**	1.07		0.16		0.43	*	-0.09	
1925-1929	0.24	*	-0.14	***	0.19	*	-0.15	***	0.33	*	-0.14	***	0.29		-0.14	**	0.42		-0.16	*	0.72		0.11		0.03		-0.20	***
1930-1934	0.29	**	-0.19	***	0.24	**	-0.17	***	0.31	*	-0.13	***	0.28		-0.10	*	0.41		-0.05		0.86		-0.03		0.22		-0.11	*
1935-1939	0.42	**	-0.27	***	0.23	*	-0.19	***	0.48	**	-0.19	***	0.71	**	-0.27	***	0.75	**	-0.24	***	-0.02		-0.30		0.22		-0.15	***
1940-1944	0.34	**	-0.21	***	0.26	**	-0.27	***	0.33	*	-0.16	***	0.43	*	-0.17	***	0.52	*	-0.32	***	0.27		-0.30		-0.01		-0.19	***
1945-1949	0.08		-0.13	***	0.00		-0.20	***	0.02		-0.11	***	0.10		-0.17	***	0.07		-0.20	***	-0.66		-0.29		-0.16		-0.18	***
1950-1954	-0.14	*	0.03		-0.09		-0.06	***	-0.09		0.04		-0.24	*	0.02		-0.27		-0.18	***	-0.69		-0.09		-0.06		-0.12	***
1955-1959	-0.30	***	0.15	***	-0.22	***	0.11	***	-0.14		0.09	***	-0.30	**	0.11	***	-0.10		0.04		-0.67		0.12		-0.11		-0.01	
1960-1964	-0.16	**	0.18	***	-0.14	**	0.15	***	-0.29	***	0.18	***	-0.18		0.10	***	-0.43	***	0.10	*	-1.06		0.30		-0.20	*	0.13	***
1965-1969	-0.08		0.24	***	-0.17	***	0.15	***	-0.34	***	0.21	***	-0.38	***	0.19	***	-0.34	**	0.20	***	-0.14		0.01		-0.14		0.15	***
1970-1974	-0.29	***	0.23	***	-0.14	**	0.17	***	-0.21	*	0.16	***	-0.35	***	0.16	***	-0.10		0.22	***	-0.25		-0.03		-0.15		0.18	***
1975-1979	-0.42	***	0.19	***	-0.12	*	0.10	***	-0.30	***	0.10	**	-0.45	***	0.07	*	-0.38	**	0.24	***	0.14		0.03		-0.26	*	0.11	*
1980-1984	-0.49	***	0.13	***	-0.15	**	0.10	***	-0.10	.	0.04		-0.21	*	0.09	*	-0.21		0.16	**	-0.24		0.09		-0.10		0.12	*
1985-1989	-0.35	***	0.03		-0.12	*	0.17	***	-0.12		0.02		-0.04		0.09	*	-0.23		0.20	**	-0.29	*	0.09		-0.02		0.07	
1990-1994	-0.05		-0.10	*	0.05		0.10	**	0.16		-0.04		0.00		0.21	***	-0.34	**	0.28	***	-0.09		0.06		-0.11		0.21	**
1995-1999	-0.03		-0.12	*	-0.08		0.19	***	-0.12		-0.01		-0.18	*	0.25	***	0.11		0.09		0.04		0.24		-0.11		0.39	***
2000-2004	NA	NA	-0.05		NA	NA	0.31	***	NA	NA	0.34	***	NA	NA	0.11		NA	NA	0.52	***	NA	NA	0.27		NA	NA	0.21	

Table 48: Estimated inter-cohort deviations and intra-cohort life-course slopes for males in every province.

*p-value: * < 0.05, ** < 0.01, *** < 0.001.*

Inter-cohort deviation represents a cohort's average deviation from the predicted rate determined by age and period main effects. Intra-cohort life-course dynamic measures linear change in a cohort's interaction terms at different ages within that cohort. The intra-cohort slope should be interpreted in conjunction with the inter-cohort deviation. For example, a significant and negative intra-cohort slope with a significant and positive inter-cohort deviation, this means that the cohort's above average suicide rate decreases with age. See Table 16 for all possible combinations.

See Table 51 for confidence intervals.

	Québec			Ontario			British Columbia			Alberta			Saskatchewan			Manitoba			Atlantic Canada		
cohort	Intra-cohort slope	Sig.	Inter-Cohort Deviation	Intra-cohort slope	Sig.	Inter-Cohort Deviation	Sig.	Intra-cohort slope	Sig.	Inter-Cohort Deviation	Sig.	Intra-cohort slope	Sig.	Inter-Cohort Deviation	Sig.	Intra-cohort slope	Sig.	Inter-Cohort Deviation	Sig.	Intra-cohort slope	Sig.	Inter-Cohort Deviation	Sig.
1870-1874	NA	NA	-19.22	NA	NA	-0.65		NA	NA	-0.17		NA	NA	0.76		NA	NA	-12.10		NA	NA	-16.19		NA	NA	12.81	
1875-1879	-0.26		2.16	0.08		0.27		0.27		0.06		-0.07		1.54		3.77		7.27		1.76		3.94		6.40		6.85	
1880-1884	0.40		1.15	-0.20		0.04		-0.14		-0.03		0.00		0.54		-12.32		-1.66		2.28		2.24		-9.94		-3.84	
1885-1889	0.21		0.67	-1.13	***	-0.04		-0.32		-0.01		1.28		1.04		-2.20		-1.44		-13.11		-3.85		-9.05		-3.00	
1890-1894	-0.60		0.74	-0.20		0.13		-0.35		-0.10		-6.57		-4.25		2.87		3.54		2.39		1.76		-8.54		-1.70	
1895-1899	-0.27		0.26	-0.39	*	0.15	*	-0.37		0.19		0.76		0.91		3.82		2.16		1.67		0.93		-7.37		-1.82	
1900-1904	-0.45		0.31	0.13		0.05		0.03		0.14		-0.12		0.51		2.35		1.76		1.79		0.76		5.37		2.00	
1905-1909	-0.20		0.37	-0.17		0.09		0.23		0.17	*	-0.34		0.28		-10.56		-1.02		1.41		0.70		-7.62		-1.09	
1910-1914	0.07		0.41	0.32	*	0.15	***	-0.20		0.15	*	0.74		0.19		-9.07		-0.75		1.92		0.99		-6.97		-1.18	
1915-1919	-0.04		0.07	0.29		0.10	*	-0.17		0.11		0.85		0.20		3.37		1.50		1.72		0.64		4.37		1.33	
1920-1924	-0.10		0.14	0.28		0.03		0.14		0.07		-0.13		0.15		3.07		0.64		2.10		0.15		4.65		1.07	
1925-1929	-0.25		0.08	-0.06		-0.02		0.27		-0.01		0.73		-0.01		1.78		0.87		1.54		0.40		2.87		0.80	
1930-1934	-0.25		0.00	-0.06		-0.02		-0.47	*	-0.12	*	-0.04		-0.06		-9.12		-1.21		-9.25		-1.62		3.33		0.61	
1935-1939	-0.59		-0.25	0.21		-0.09	*	0.27		-0.12		1.05		-0.08		15.39		-3.97		-2.43		-0.60		4.55		-2.66	
1940-1944	0.23		-0.23	0.18		-0.13	**	0.48		-0.20	**	0.41		-0.01		0.11		-0.05		0.75		-0.52		-2.50		-0.37	
1945-1949	0.02		-0.15	-0.16		-0.19	***	-0.01		-0.17	**	-0.76		-0.20		-12.26		-2.10		-0.07		-0.26		-3.39		0.04	
1950-1954	0.25		-0.08	0.15		-0.16	***	0.16		-0.14	**	-0.16		-0.10		0.08		-0.36		-0.15		-0.24		-2.59		0.05	
1955-1959	-0.07		0.01	0.15		-0.04		0.01		-0.01		-0.13		0.04		-0.29		-0.07		0.59		-0.29		-2.30		0.01	
1960-1964	0.07		-0.09	-0.01		-0.02		-0.22		-0.01		-0.12		-0.10		-0.73		0.18		1.04		-0.31		-2.60		0.04	
1965-1969	0.28	*	-0.13	0.13		-0.05		-0.06		0.03		-0.02		-0.07		-1.39		0.25		1.18		-0.13		-2.02		0.00	
1970-1974	-0.29	*	-0.15	-0.09		-0.04		-0.13		0.00		-0.33		0.00		-1.75		0.63		0.30		0.09		-2.55		0.00	
1975-1979	-0.51	***	-0.15	-0.28	*	0.00		-0.35	*	0.05		-0.35	*	-0.11		-1.41		0.37		-0.15		0.09		-2.31		0.01	
1980-1984	-0.78	***	-0.04	-0.40	***	0.08		-0.16		0.11		-0.58	***	0.03		-0.69		0.37		0.37		0.21		-1.42		-0.28	
1985-1989	-0.78	***	0.13	-0.22	*	0.24	***	-0.23		-0.04		-0.28		0.14		-0.74		1.18		0.39		0.41		-1.55		-0.24	
1990-1994	-0.48	***	-0.02	-0.15		0.37	***	-0.08		0.37	***	-0.22		0.33		-0.28		1.92		-0.49	*	1.00		-1.48		0.18	
1995-1999	-0.08		0.09	-0.03		0.43	***	-0.17		0.54	***	-0.21		0.54		-0.14		3.43		-1.42		1.54		-1.41		0.92	
2000-2004	NA	NA	0.15	NA	NA	0.95	***	NA	NA	0.65	***	NA	NA	0.43		NA	NA	3.41		NA	NA	0.78		NA	NA	1.73	

Table 49: Estimated inter-cohort deviations and intra-cohort life-course slopes for males in every province.

*p-value: * < 0.05, ** < 0.01, *** < 0.001.*

Inter-cohort deviation represents a cohort's average deviation from the predicted rate determined by age and period main effects. Intra-cohort life-course dynamic measures linear change in a cohort's interaction terms at different ages within that cohort. The intra-cohort slope should be interpreted in conjunction with the inter-cohort deviation. For example, a significant and negative intra-cohort slope with a significant and positive inter-cohort deviation, this means that the cohort's above average suicide rate decreases with age. See Table 16 for all possible combinations.

See Table 53 for confidence intervals.

	British Columbia		Alberta		Ontario		Québec		Saskatchewan		Manitoba		Atlantic	
	Coefficient	95% CI	Coefficient	95% CI	Coefficient	95% CI	Coefficient	95% CI	Coefficient	95% CI	Coefficient	95% CI	Coefficient	95% CI
Age Main Effects														
15-19	-0.75	-0.83,-0.67	-0.53	-0.62,-0.43	-0.79	-0.84,-0.74	-0.70	-0.76,-0.64	-0.34	-0.45,-0.23	-0.27	-431.36,430.82	-0.69	-0.78,-0.60
20-24	-0.16	-0.21,-0.10	-0.07	-0.14,-0.00	-0.24	-0.27,-0.20	-0.11	-0.15,-0.06	0.11	0.03,0.19	0.19	-430.91,431.28	-0.12	-0.20,-0.04
25-29	-0.12	-0.18,-0.07	-0.18	-0.24,-0.11	-0.22	-0.26,-0.19	-0.04	-0.08,0.00	-0.04	-0.13,0.05	0.06	-431.03,431.15	-0.07	-0.14,0.01
30-34	-0.14	-0.19,-0.08	-0.09	-0.15,-0.03	-0.18	-0.21,-0.14	0.00	-0.04,0.04	-0.05	-0.14,0.04	0.06	-431.03,431.16	-0.12	-0.20,-0.05
35-39	-0.09	-0.14,-0.04	-0.06	-0.12,0.00	-0.06	-0.09,-0.03	0.06	0.02,0.10	0.00	-0.09,0.09	0.12	-430.97,431.21	0.04	-0.04,0.11
40-44	0.04	-0.01,0.09	0.10	0.04,0.16	0.07	0.04,0.10	0.13	0.09,0.17	0.08	-0.01,0.17	0.16	-430.93,431.25	0.15	0.08,0.22
45-49	0.10	0.05,0.15	0.19	0.13,0.25	0.14	0.11,0.17	0.21	0.17,0.25	0.07	-0.02,0.16	0.26	-430.83,431.35	0.17	0.10,0.24
50-54	0.17	0.12,0.22	0.24	0.18,0.31	0.21	0.18,0.24	0.24	0.20,0.28	0.09	0.00,0.18	0.31	-430.78,431.41	0.25	0.18,0.31
55-59	0.18	0.13,0.24	0.22	0.16,0.29	0.24	0.20,0.27	0.19	0.15,0.24	0.13	0.04,0.23	0.28	-430.81,431.37	0.28	0.21,0.35
60-64	0.11	0.05,0.17	0.15	0.07,0.22	0.16	0.13,0.20	0.13	0.09,0.18	0.03	-0.08,0.13	0.19	-430.91,431.28	0.19	0.11,0.27
65-69	0.05	-0.02,0.11	0.01	-0.08,0.10	0.11	0.07,0.15	-0.05	-0.10,0.01	-0.07	-0.18,0.05	0.16	-430.93,431.26	0.01	-0.08,0.10
70-74	0.06	-0.01,0.13	-0.03	-0.14,0.07	0.13	0.08,0.17	-0.03	-0.10,0.03	-0.04	-0.16,0.09	0.03	-431.06,431.13	0.00	-0.11,0.10
75-79	0.23	0.15,0.31	-0.02	-0.15,0.10	0.20	0.14,0.25	0.01	-0.07,0.10	0.03	-0.12,0.17	0.22	-430.87,431.31	0.03	-0.10,0.15
80-84	0.31	0.22,0.41	0.07	-0.10,0.23	0.24	0.17,0.31	-0.05	-0.17,0.06	-0.01	-0.20,0.18	-1.78	-5605.99,5602.44	-0.11	-0.30,0.07
Period Main Effects														
1950-1954	0.22	0.14,0.31	-0.24	-0.38,-0.11	-0.09	-0.15,-0.03	-0.74	-0.83,-0.65	-0.37	-0.52,-0.22	0.08	-431.01,431.17	-0.51	-0.63,-0.39
1955-1959	0.03	-0.06,0.11	-0.05	-0.16,0.05	-0.02	-0.07,0.04	-0.57	-0.65,-0.49	-0.16	-0.29,-0.04	-0.08	-431.17,431.01	-0.52	-0.66,-0.37
1960-1964	0.06	-0.02,0.14	-0.02	-0.12,0.08	0.01	-0.04,0.06	-0.54	-0.62,-0.46	-0.06	-0.18,0.05	-0.01	-431.11,431.08	-0.27	-0.38,-0.16
1965-1969	0.22	0.16,0.29	0.01	-0.09,0.11	0.15	0.10,0.19	-0.35	-0.42,-0.27	-0.18	-0.31,-0.05	0.21	-430.89,431.30	-0.20	-0.30,-0.09
1970-1974	0.25	0.19,0.32	-0.13	-0.24,-0.03	0.28	0.23,0.32	-0.07	-0.13,-0.01	0.10	-0.01,0.21	0.20	-430.90,431.29	-0.05	-0.16,0.06
1975-1979	0.23	0.17,0.30	-0.59	-0.71,-0.47	0.30	0.26,0.34	0.03	-0.02,0.09	0.20	0.10,0.31	-1.41	-5605.63,5602.80	0.10	0.01,0.20
1980-1984	0.12	0.06,0.18	0.32	0.25,0.39	0.25	0.22,0.29	0.38	0.33,0.42	0.32	0.22,0.41	0.31	-430.78,431.40	0.24	0.16,0.32
1985-1989	0.02	-0.04,0.08	0.29	0.23,0.36	0.15	0.11,0.18	0.37	0.33,0.42	0.13	0.04,0.23	0.33	-430.76,431.43	0.21	0.13,0.28
1990-1994	-0.02	-0.08,0.03	0.29	0.22,0.35	-0.02	-0.06,0.01	0.41	0.37,0.45	0.15	0.05,0.25	0.18	-430.91,431.28	0.25	0.18,0.33
1995-1999	-0.14	-0.19,-0.08	0.18	0.11,0.24	-0.10	-0.13,-0.06	0.51	0.48,0.55	0.05	-0.06,0.15	0.12	-430.98,431.21	0.23	0.16,0.30
2000-2004	-0.20	-0.25,-0.14	0.05	-0.01,0.12	-0.28	-0.32,-0.24	0.35	0.31,0.39	-0.17	-0.30,-0.05	0.02	-431.07,431.12	0.09	0.01,0.16
2005-2009	-0.27	-0.32,-0.21	-0.09	-0.15,-0.02	-0.25	-0.29,-0.21	0.17	0.13,0.21	-0.08	-0.19,0.03	0.03	-431.06,431.13	0.10	0.02,0.17
2010-2014	-0.20	-0.24,-0.15	-0.04	-0.10,0.01	-0.19	-0.22,-0.16	0.11	0.07,0.15	-0.10	-0.20,0.00	-0.03	-431.12,431.06	0.11	0.04,0.19
2015-2019	-0.34	-0.39,-0.29	0.04	-0.02,0.09	-0.19	-0.22,-0.16	-0.07	-0.11,-0.04	0.17	0.08,0.26	0.06	-431.04,431.15	0.21	0.15,0.28

Table 50: Estimated age and period main coefficients from the Poisson APC-I model with *Confidence Intervals*, for males.

Notes: These are the same coefficients as mentioned above in Table 32 but with confidence intervals.

	Québec		Ontario		British Columbia		Alberta		Saskatchewan		Manitoba		Atlantic Canada	
cohort	Inter-Cohort Deviation	95% CI	Inter-Cohort Deviation	95% CI	Inter-Cohort Deviation	95% CI	Inter-Cohort Deviation	95% CI	Inter-Cohort Deviation	95% CI	Inter-Cohort Deviation	95% CI	Inter-Cohort Deviation	95% CI
1870-1874	0.73	0.17,1.29	-0.27	-0.72,0.18	0.29	-0.15,0.74	0.02	-0.99,1.03	0.18	-0.83,1.20	2.00	-5602.22,5606.21	1.12	0.54,1.71
1875-1879	0.47	0.11,0.82	0.32	0.12,0.53	0.31	0.04,0.58	0.44	-0.01,0.88	0.37	-0.12,0.86	0.76	-2585.80,2587.32	0.12	-0.54,0.78
1880-1884	0.34	0.08,0.61	0.18	0.03,0.33	0.04	-0.17,0.26	0.45	0.15,0.76	0.46	0.15,0.76	0.76	-1579.91,1581.44	0.38	0.04,0.72
1885-1889	0.16	-0.06,0.37	0.26	0.14,0.37	0.28	0.13,0.42	0.30	0.07,0.54	0.00	-0.31,0.32	0.61	-1077.12,1078.35	0.15	-0.15,0.44
1890-1894	0.01	-0.17,0.19	0.14	0.04,0.24	0.28	0.15,0.41	0.07	-0.17,0.30	0.28	0.05,0.51	0.06	-775.90,776.03	0.05	-0.21,0.31
1895-1899	0.14	0.01,0.27	0.15	0.07,0.22	0.13	0.00,0.25	0.04	-0.18,0.26	0.13	-0.09,0.34	-3.27	-12504.98,12498.45	0.04	-0.16,0.25
1900-1904	0.15	0.05,0.25	0.18	0.11,0.24	0.15	0.04,0.25	0.18	0.01,0.34	0.23	0.06,0.40	0.44	-1292.84,1293.72	0.14	-0.02,0.30
1905-1909	0.03	-0.05,0.12	0.12	0.06,0.18	-0.01	-0.10,0.09	0.06	-0.08,0.20	0.10	-0.05,0.25	0.60	-1077.13,1078.34	0.04	-0.09,0.18
1910-1914	0.01	-0.06,0.08	0.13	0.08,0.18	0.04	-0.04,0.12	0.06	-0.06,0.18	0.09	-0.04,0.23	0.34	-909.74,910.43	0.05	-0.07,0.17
1915-1919	-0.09	-0.15,-0.02	0.01	-0.04,0.06	-0.11	-0.19,-0.03	-0.02	-0.12,0.08	0.06	-0.07,0.18	0.27	-775.70,776.24	0.03	-0.07,0.14
1920-1924	-0.11	-0.17,-0.06	-0.11	-0.15,-0.06	-0.14	-0.21,-0.06	-0.19	-0.29,-0.08	-0.21	-0.36,-0.07	0.16	-666.08,666.39	-0.09	-0.19,0.02
1925-1929	-0.14	-0.19,-0.08	-0.15	-0.20,-0.11	-0.14	-0.21,-0.07	-0.14	-0.23,-0.05	-0.16	-0.28,-0.04	0.11	-574.68,574.91	-0.20	-0.30,-0.09
1930-1934	-0.19	-0.24,-0.14	-0.17	-0.21,-0.12	-0.13	-0.20,-0.07	-0.10	-0.18,-0.02	-0.05	-0.16,0.06	-0.03	-497.45,497.38	-0.11	-0.21,-0.01
1935-1939	-0.27	-0.32,-0.22	-0.19	-0.23,-0.15	-0.19	-0.26,-0.12	-0.27	-0.37,-0.18	-0.24	-0.37,-0.11	-0.30	-369.81,369.21	-0.15	-0.24,-0.06
1940-1944	-0.21	-0.26,-0.16	-0.27	-0.31,-0.22	-0.16	-0.23,-0.10	-0.17	-0.26,-0.09	-0.32	-0.45,-0.20	-0.30	-33.46,32.87	-0.19	-0.27,-0.10
1945-1949	-0.13	-0.18,-0.09	-0.20	-0.24,-0.16	-0.11	-0.17,-0.05	-0.17	-0.25,-0.10	-0.20	-0.30,-0.09	-0.29	-72.14,71.56	-0.18	-0.26,-0.11
1950-1954	0.03	-0.00,0.07	-0.06	-0.10,-0.03	0.04	-0.01,0.09	0.02	-0.04,0.07	-0.18	-0.28,-0.08	-0.09	-117.66,117.48	-0.12	-0.19,-0.05
1955-1959	0.15	0.12,0.18	0.11	0.08,0.14	0.09	0.04,0.14	0.11	0.06,0.16	0.04	-0.04,0.13	0.12	-172.31,172.56	-0.01	-0.07,0.06
1960-1964	0.18	0.15,0.21	0.15	0.12,0.18	0.18	0.13,0.23	0.10	0.05,0.15	0.10	0.01,0.18	0.30	-239.20,239.80	0.13	0.07,0.19
1965-1969	0.24	0.21,0.27	0.15	0.12,0.18	0.21	0.16,0.26	0.19	0.14,0.24	0.20	0.11,0.29	0.01	-431.09,431.10	0.15	0.09,0.22
1970-1974	0.23	0.19,0.27	0.17	0.13,0.21	0.16	0.10,0.22	0.16	0.10,0.22	0.22	0.11,0.32	-0.03	-431.13,431.06	0.18	0.10,0.25
1975-1979	0.19	0.15,0.24	0.10	0.06,0.15	0.10	0.03,0.17	0.07	0.00,0.14	0.24	0.12,0.35	0.03	-431.06,431.13	0.11	0.02,0.20
1980-1984	0.13	0.08,0.18	0.10	0.05,0.16	0.04	-0.04,0.12	0.09	0.01,0.16	0.16	0.04,0.29	0.09	-431.00,431.19	0.12	0.02,0.22
1985-1989	0.03	-0.03,0.09	0.17	0.12,0.23	0.02	-0.07,0.11	0.09	0.01,0.18	0.20	0.06,0.34	0.09	-431.00,431.19	0.07	-0.05,0.19
1990-1994	-0.10	-0.18,-0.02	0.10	0.04,0.17	-0.04	-0.15,0.07	0.21	0.12,0.31	0.28	0.13,0.43	0.06	-431.03,431.15	0.21	0.08,0.34
1995-1999	-0.12	-0.23,-0.01	0.19	0.11,0.27	-0.01	-0.15,0.13	0.25	0.13,0.37	0.09	-0.12,0.30	0.24	-430.85,431.34	0.39	0.23,0.55
2000-2004	-0.05	-0.23,0.14	0.31	0.18,0.44	0.34	0.14,0.55	0.11	-0.09,0.30	0.52	0.26,0.78	0.27	-430.82,431.36	0.21	-0.07,0.48

Table 51: Estimated inter-cohort deviations for males in every province, with *confidence intervals*.

Notes: These are the same coefficients as mentioned above in Table 48 but with confidence intervals.

	British Columbia		Alberta		Ontario		Québec		Saskatchewan		Manitoba		Atlantic	
	Coefficient	95% CI	Coefficient	95% CI	Coefficient	95% CI	Coefficient	95% CI	Coefficient	95% CI	Coefficient	95% CI	Coefficient	95% CI
Age Main Effects														
15-19	-0.82	-0.98,-0.67	-0.56	-431.32,430.87	-0.81	-0.90,-0.72	-0.72	-431.81,430.38	-0.67	-15590.90,15589.56	0.21	-1230.85,1231.27	-1.40	-15503.30,15500.51
20-24	-0.37	-0.49,-0.25	-0.08	-431.26,430.92	-0.34	-0.41,-0.28	-0.09	-431.19,431.00	-0.57	-15590.81,15589.66	0.33	-1230.73,1231.39	0.58	-3099.80,3100.96
25-29	-0.22	-0.32,-0.11	-0.07	-431.44,430.74	-0.16	-0.22,-0.10	0.14	-430.95,431.24	1.26	-3514.24,3516.76	0.53	-1230.53,1231.59	0.72	-3099.66,3101.10
30-34	-0.10	-0.20,-0.01	0.12	-5605.80,5602.63	-0.09	-0.15,-0.03	0.26	-430.83,431.36	1.27	-3514.23,3516.77	0.45	-1230.61,1231.51	0.93	-3099.45,3101.31
35-39	0.04	-0.05,0.13	0.31	-430.78,431.40	0.07	0.02,0.13	0.42	-430.67,431.51	1.34	-3514.16,3516.84	0.60	-1230.46,1231.66	1.20	-3099.18,3101.58
40-44	0.16	0.07,0.24	0.50	-430.59,431.59	0.20	0.14,0.25	0.54	-430.55,431.63	1.29	-3514.21,3516.79	0.47	-1230.59,1231.53	1.19	-3099.19,3101.57
45-49	0.30	0.22,0.39	0.46	-430.61,431.58	0.39	0.34,0.44	0.66	-430.44,431.75	1.40	-3514.10,3516.90	0.52	-1230.54,1231.58	1.26	-3099.12,3101.64
50-54	0.41	0.32,0.49	0.54	-430.96,431.23	0.43	0.38,0.49	0.65	-430.44,431.75	1.53	-3513.97,3517.04	0.60	-1230.46,1231.66	1.47	-3098.91,3101.86
55-59	0.30	0.21,0.39	0.48	-430.75,431.44	0.40	0.35,0.46	0.50	-430.59,431.60	1.31	-3514.19,3516.81	0.42	-1230.64,1231.48	1.34	-3099.04,3101.72
60-64	0.21	0.11,0.31	0.12	-430.96,431.22	0.26	0.19,0.32	0.34	-430.76,431.43	1.13	-3514.38,3516.63	0.51	-1230.55,1231.57	1.14	-3099.24,3101.52
65-69	0.11	-0.01,0.23	0.12	-431.02,431.16	0.23	0.16,0.29	0.01	-431.08,431.11	0.99	-3514.51,3516.50	0.47	-1230.59,1231.53	0.85	-3099.53,3101.23
70-74	-0.01	-0.14,0.12	0.11	-431.01,431.17	-0.05	-0.14,0.03	-0.17	-431.26,430.92	-1.09	-15591.32,15589.15	0.02	-1231.04,1231.08	0.59	-3099.79,3100.97
75-79	-0.04	-0.19,0.12	-1.80	-431.01,431.17	-0.13	-0.24,-0.03	-0.53	-431.62,430.56	-1.16	-15591.39,15589.08	-0.12	-1231.18,1230.94	0.49	-3099.89,3100.87
80-84	0.02	-0.18,0.22	-0.25	-430.90,431.28	-0.40	-0.56,-0.23	-2.02	-5606.24,5602.20	-8.04	-34152.46,34136.39	-5.00	-16008.78,15998.79	-10.36	-37343.89,37323.16
Period Main Effects														
1950-1954	0.20	0.03,0.38	-0.22	-431.32,430.87	-0.16	-0.29,-0.03	-2.15	-5606.36,5602.07	-2.62	-21768.47,21763.22	-1.62	-9295.92,9292.68	-1.06	-15502.96,15500.84
1955-1959	-0.15	-0.34,0.03	-0.17	-431.26,430.92	-0.20	-0.31,-0.09	-0.51	-431.60,430.58	-0.62	-15590.85,15589.62	0.10	-1230.96,1231.16	0.26	-3100.12,3100.65
1960-1964	-0.05	-0.21,0.11	-0.35	-431.44,430.74	-0.06	-0.16,0.04	-0.42	-431.51,430.68	-2.60	-21768.44,21763.25	0.17	-1230.90,1231.23	-1.06	-15502.97,15500.84
1965-1969	0.42	0.30,0.54	-1.59	-5605.80,5602.63	0.21	0.12,0.30	-0.10	-431.19,431.00	0.95	-3514.55,3516.45	-1.29	-9295.59,9293.02	-0.95	-15502.85,15500.95
1970-1974	0.60	0.50,0.70	0.31	-430.78,431.40	0.55	0.49,0.62	0.20	-430.89,431.29	1.30	-3514.20,3516.80	0.65	-1230.41,1231.71	-0.82	-15502.72,15501.09
1975-1979	0.49	0.40,0.59	0.50	-430.59,431.59	0.49	0.43,0.55	0.28	-430.81,431.38	1.64	-3513.86,3517.14	0.74	-1230.32,1231.80	-0.70	-15502.60,15501.20
1980-1984	0.15	0.05,0.25	0.49	-430.61,431.58	0.31	0.25,0.37	0.49	-430.61,431.58	1.37	-3514.13,3516.87	0.35	-1230.71,1231.41	0.91	-3099.47,3101.29
1985-1989	-0.06	-0.17,0.04	0.14	-430.96,431.23	0.14	0.08,0.20	0.38	-430.71,431.48	-0.51	-15590.74,15589.72	0.55	-1230.51,1231.61	-0.78	-15502.68,15501.12
1990-1994	-0.15	-0.25,-0.05	0.35	-430.75,431.44	-0.13	-0.19,-0.06	0.33	-430.76,431.43	-0.65	-15590.88,15589.58	0.16	-1230.90,1231.22	-0.75	-15502.65,15501.15
1995-1999	-0.33	-0.44,-0.23	0.13	-430.96,431.22	-0.25	-0.31,-0.18	0.53	-430.56,431.63	0.95	-3514.55,3516.45	0.12	-1230.94,1231.18	0.79	-3099.59,3101.17
2000-2004	-0.23	-0.32,-0.13	0.07	-431.02,431.16	-0.34	-0.41,-0.27	0.32	-430.77,431.42	0.69	-3514.81,3516.19	0.33	-1230.73,1231.39	0.86	-3099.52,3101.24
2005-2009	-0.29	-0.39,-0.20	0.08	-431.01,431.17	-0.26	-0.32,-0.20	0.25	-430.85,431.34	1.22	-3514.28,3516.72	0.38	-1230.68,1231.44	0.84	-3099.54,3101.22
2010-2014	-0.22	-0.31,-0.12	0.08	-431.01,431.17	-0.18	-0.24,-0.12	0.22	-430.87,431.32	-0.65	-15590.88,15589.59	-1.20	-9295.50,9293.10	1.09	-3099.29,3101.47
2015-2019	-0.37	-0.47,-0.28	0.19	-430.90,431.28	-0.13	-0.18,-0.07	0.16	-430.93,431.26	-0.47	-15590.70,15589.77	0.56	-1230.50,1231.62	1.36	-3099.02,3101.74

Table 52: Estimated age and period main coefficients from the Poisson APC-I model with *Confidence Intervals*, for females.

Notes: These are the same coefficients as mentioned above in Table 33 but with confidence.

	Québec		Ontario		British Columbia		Alberta		Saskatchewan		Manitoba		Atlantic Canada	
cohort	Inter-Cohort Deviation	95% CI	Inter-Cohort Deviation	95% CI	Inter-Cohort Deviation	95% CI	Inter-Cohort Deviation	95% CI	Inter-Cohort Deviation	95% CI	Inter-Cohort Deviation	95% CI	Inter-Cohort Deviation	95% CI
1870-1874	-19.22	-72874.02,72835.59	-0.65	-1.88,0.58	-0.17	-1.41,1.07	0.76	-430.34,431.85	-12.10	-200970.48,200946.27	-16.19	-120842.12,120809.75	12.81	-40292.14,40317.75
1875-1879	2.16	-5602.06,5606.37	0.27	-0.19,0.73	0.06	-0.62,0.75	1.54	-2585.02,2588.10	7.27	-24065.29,24079.82	3.94	-11029.92,11037.79	6.85	-18595.44,18609.13
1880-1884	1.15	-3591.30,3593.59	0.04	-0.31,0.39	-0.03	-0.52,0.46	0.54	-1580.13,1581.22	-1.66	-69016.16,69012.83	2.24	-6973.77,6978.25	-3.84	-67622.47,67614.79
1885-1889	0.67	-2585.89,2587.23	-0.04	-0.33,0.25	-0.01	-0.35,0.33	1.04	-2585.52,2587.60	-1.44	-51860.88,51857.99	-3.85	-30913.44,30905.73	-3.00	-51300.02,51294.01
1890-1894	0.74	-1982.29,1983.77	0.13	-0.04,0.30	-0.10	-0.39,0.19	-4.25	-14920.09,14911.59	3.54	-10667.23,10674.31	1.76	-4795.69,4799.21	-1.70	-41472.69,41469.30
1895-1899	0.26	-1580.41,1580.94	0.15	0.02,0.29	0.19	-0.02,0.39	0.91	-1579.77,1581.59	2.16	-8366.41,8370.73	0.93	-3804.53,3806.39	-1.82	-34895.45,34891.82
1900-1904	0.31	-1292.97,1293.59	0.05	-0.06,0.17	0.14	-0.04,0.32	0.51	-1292.77,1293.79	1.76	-6729.91,6733.43	0.76	-3097.34,3098.86	2.00	-7316.10,7320.10
1905-1909	0.37	-1077.36,1078.11	0.09	-0.01,0.19	0.17	0.01,0.32	0.28	-1077.46,1078.01	-1.02	-26349.37,26347.32	0.70	-2568.11,2569.51	-1.09	-26468.06,26465.89
1910-1914	0.41	-909.68,910.50	0.15	0.07,0.24	0.15	0.02,0.29	0.19	-909.90,910.27	-0.75	-23607.88,23606.38	0.99	-2157.43,2159.41	-1.18	-23710.78,23708.42
1915-1919	0.07	-775.90,776.04	0.10	0.01,0.18	0.11	-0.02,0.24	0.20	-775.77,776.17	1.50	-4807.30,4810.30	0.64	-1830.84,1832.12	1.33	-5186.60,5189.26
1920-1924	0.14	-666.10,666.37	0.03	-0.05,0.11	0.07	-0.05,0.18	0.15	-666.09,666.38	0.64	-4099.05,4100.33	0.15	-1565.32,1565.62	1.07	-4446.49,4448.64
1925-1929	0.08	-574.71,574.87	-0.02	-0.09,0.06	-0.01	-0.13,0.11	-0.01	-574.80,574.78	0.87	-3514.63,3516.37	0.40	-1345.04,1345.83	0.80	-3831.37,3832.98
1930-1934	0.00	-497.41,497.42	-0.02	-0.09,0.05	-0.12	-0.25,-0.00	-0.06	-497.48,497.35	-1.21	-16649.99,16647.58	-1.62	-9965.22,9961.98	0.61	-3312.61,3313.83
1935-1939	-0.25	-369.75,369.26	-0.09	-0.16,-0.01	-0.12	-0.25,0.00	-0.08	-492.76,492.60	-3.97	-21494.47,21486.53	-0.60	-1055.80,1054.59	-2.66	-15268.66,15263.34
1940-1944	-0.23	-431.32,430.87	-0.13	-0.21,-0.05	-0.20	-0.33,-0.06	-0.01	-497.43,497.40	-0.05	-2626.54,2626.45	-0.52	-715.47,714.42	-0.37	-238.86,238.13
1945-1949	-0.15	-431.24,430.95	-0.19	-0.26,-0.13	-0.17	-0.29,-0.06	-0.20	-72.04,71.65	-2.10	-17626.20,17622.00	-0.26	-730.49,729.97	0.04	-516.70,516.77
1950-1954	-0.08	-431.17,431.01	-0.16	-0.22,-0.10	-0.14	-0.24,-0.03	-0.10	-117.67,117.47	-0.36	-2175.77,2175.05	-0.24	-762.03,761.55	0.05	-1409.21,1409.32
1955-1959	0.01	-431.09,431.10	-0.04	-0.10,0.01	-0.01	-0.10,0.08	0.04	-431.05,431.14	-0.07	-2331.99,2331.85	-0.29	-1044.88,1044.30	0.01	-1960.85,1960.86
1960-1964	-0.09	-431.18,431.00	-0.02	-0.08,0.03	-0.01	-0.10,0.09	-0.10	-431.19,430.99	0.18	-2581.01,2581.37	-0.31	-1080.25,1079.62	0.04	-2411.36,2411.45
1965-1969	-0.13	-431.22,430.97	-0.05	-0.12,0.01	0.03	-0.07,0.14	-0.07	-431.17,431.02	0.25	-2958.48,2958.99	-0.13	-1137.89,1137.63	0.00	-2794.64,2794.65
1970-1974	-0.15	-431.24,430.94	-0.04	-0.11,0.04	0.00	-0.13,0.12	0.00	-431.09,431.10	0.63	-3514.87,3516.13	0.09	-1230.97,1231.15	0.00	-3100.38,3100.38
1975-1979	-0.15	-431.25,430.94	0.00	-0.09,0.08	0.05	-0.09,0.18	-0.11	-431.21,430.98	0.37	-4206.64,4207.38	0.09	-1381.37,1381.55	0.01	-3427.59,3427.61
1980-1984	-0.04	-431.13,431.06	0.08	-0.01,0.18	0.11	-0.04,0.26	0.03	-431.06,431.13	0.37	-4965.77,4966.51	0.21	-1626.78,1627.20	-0.28	-3562.35,3561.78
1985-1989	0.13	-430.96,431.23	0.24	0.14,0.34	-0.04	-0.22,0.14	0.14	-430.95,431.23	1.18	-6417.22,6419.58	0.41	-2041.07,2041.90	-0.24	-4101.66,4101.18
1990-1994	-0.02	-431.11,431.08	0.37	0.26,0.48	0.37	0.19,0.56	0.33	-430.76,431.42	1.92	-8982.14,8985.98	1.00	-2792.21,2794.22	0.18	-5167.12,5167.48
1995-1999	0.09	-431.00,431.18	0.43	0.29,0.57	0.54	0.31,0.76	0.54	-430.55,431.64	3.43	-14300.62,14307.49	1.54	-4379.83,4382.92	0.92	-7593.43,7595.27
2000-2004	0.15	-430.95,431.24	0.95	0.76,1.13	0.65	0.29,1.02	0.43	-430.67,431.52	3.41	-21762.44,21769.25	0.78	-1230.28,1231.84	1.73	-15500.17,15503.63

Table 53: Estimated inter-cohort deviations for males in every province, with *confidence intervals*.

Notes: These are the same coefficients as mentioned above in Table 49 but with confidence intervals.

Appendix Figures

Descriptive Statistics

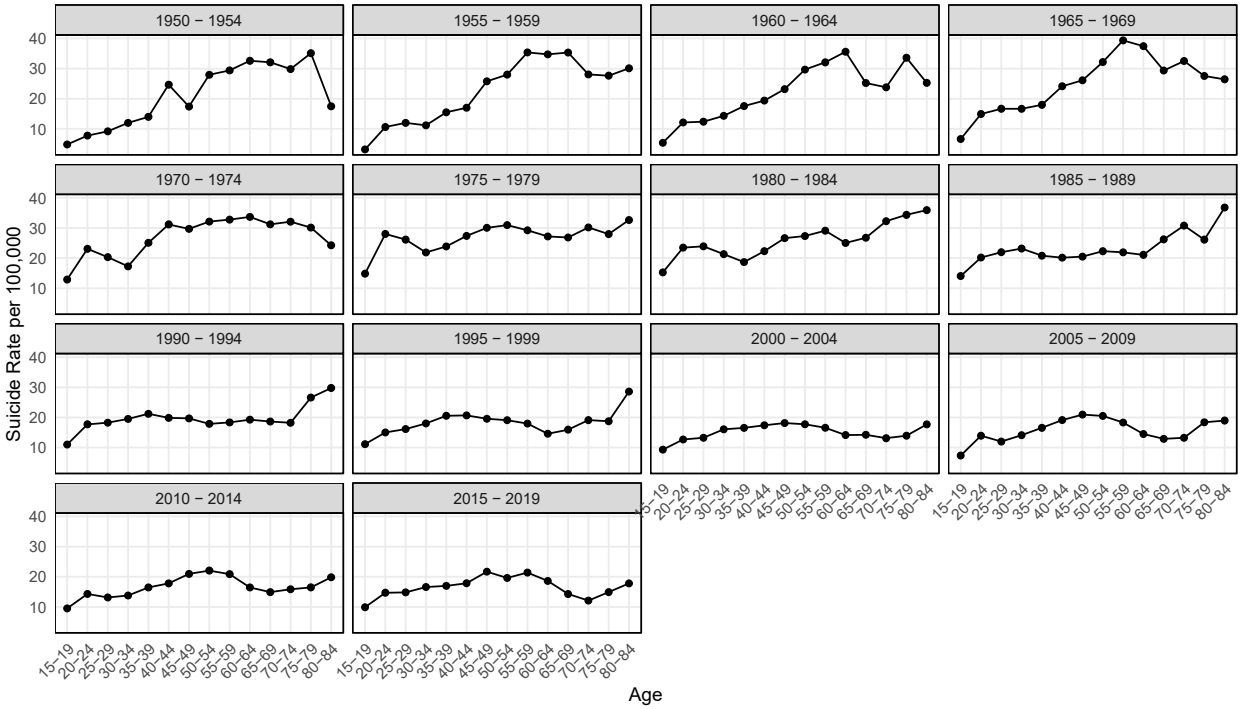

Figure 30: Suicide rates per 100,000 by period and age for males in Ontario, 1950-2019.

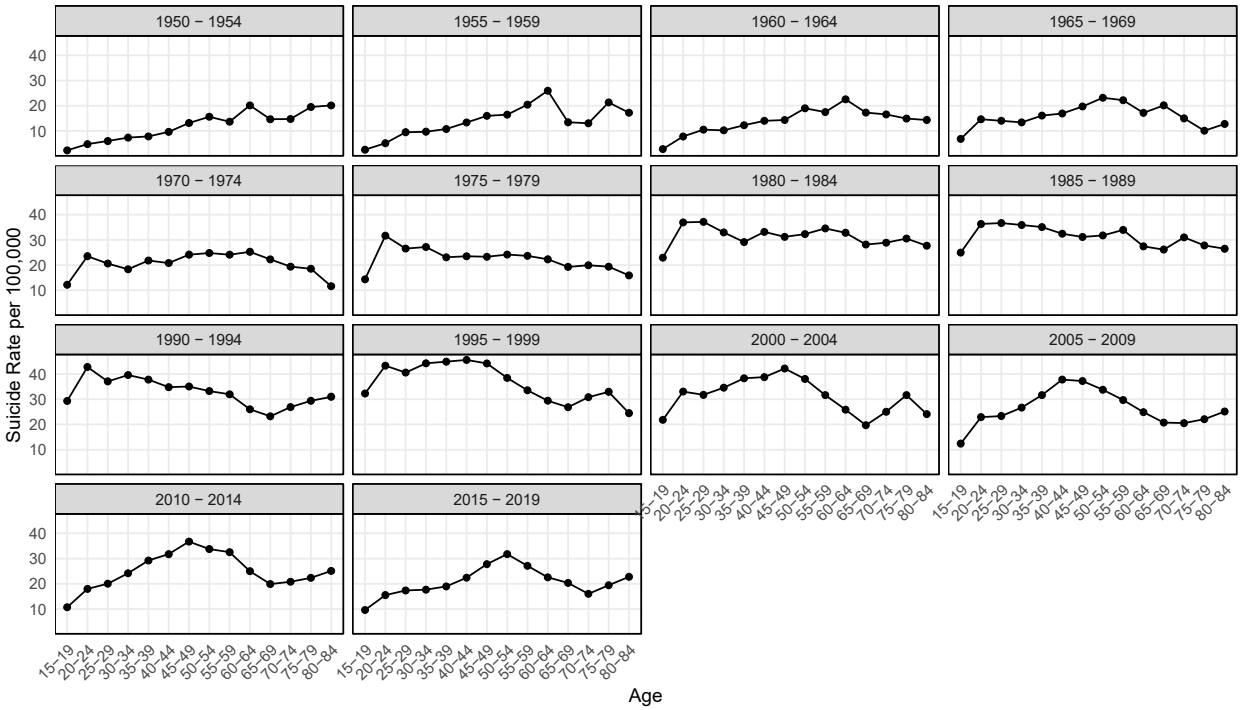

Figure 31: Suicide rates per 100,000 by period and age for males in Québec, 1950-2019.

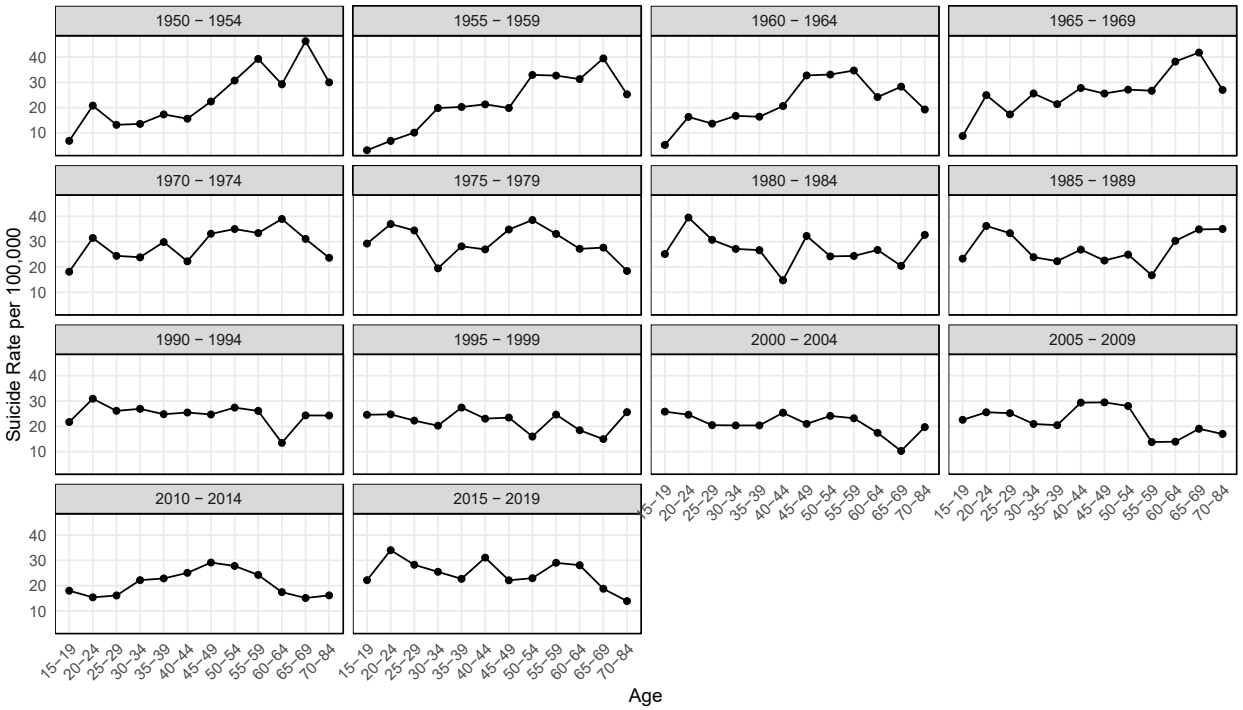

Figure 32: Suicide rates per 100,000 by period and age for males in Manitoba, 1950-2019.

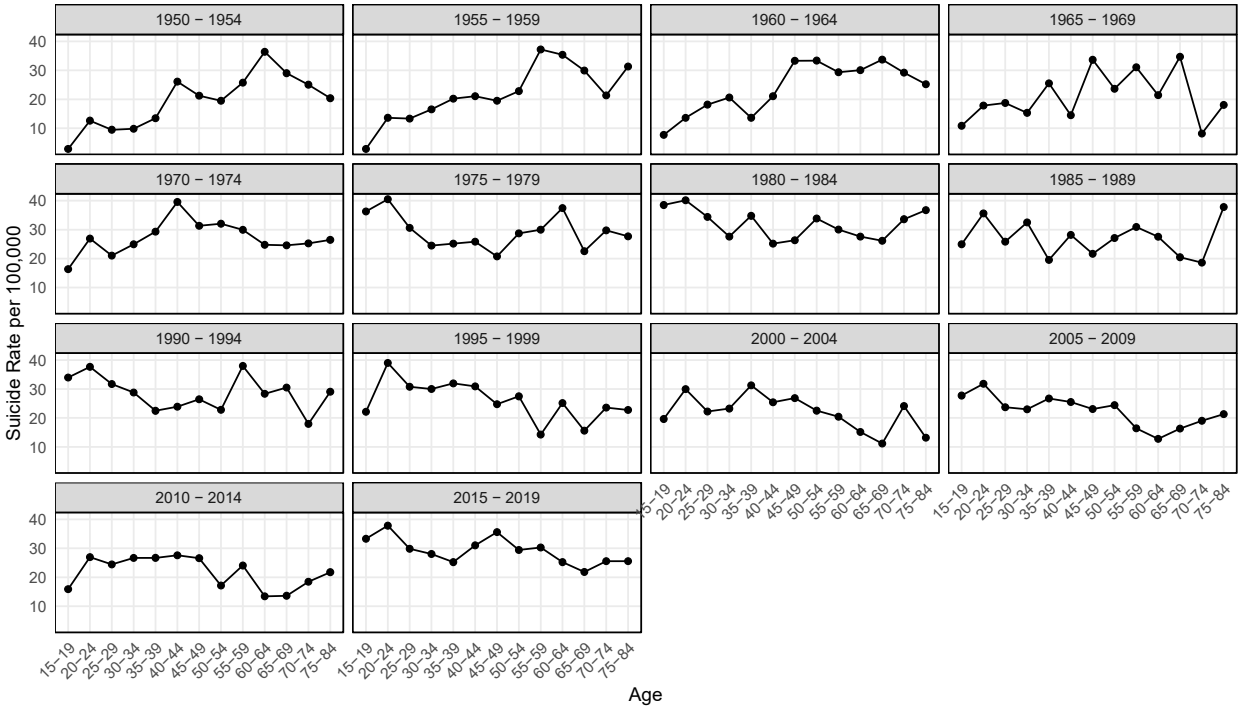

Figure 33: Suicide rates per 100,000 by period and age for males in Saskatchewan, 1950-2019.

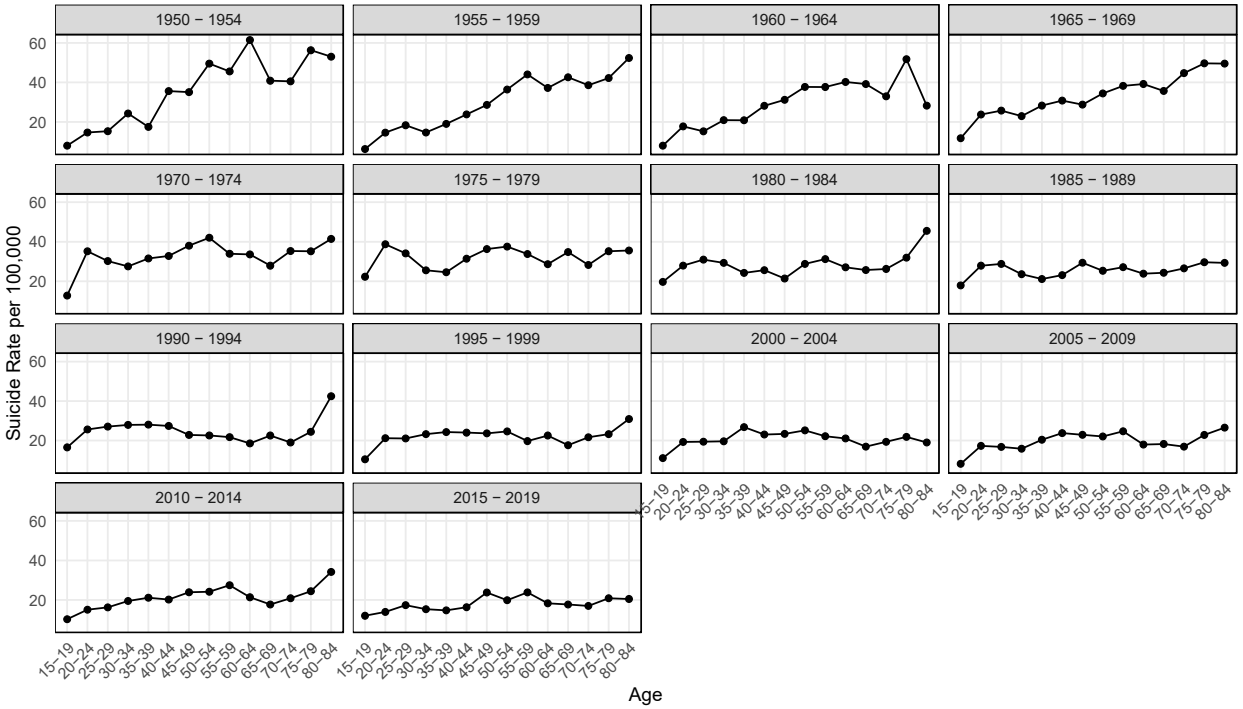

Figure 34: Suicide rates per 100,000 by period and age for males in British Columbia, 1950-2019.

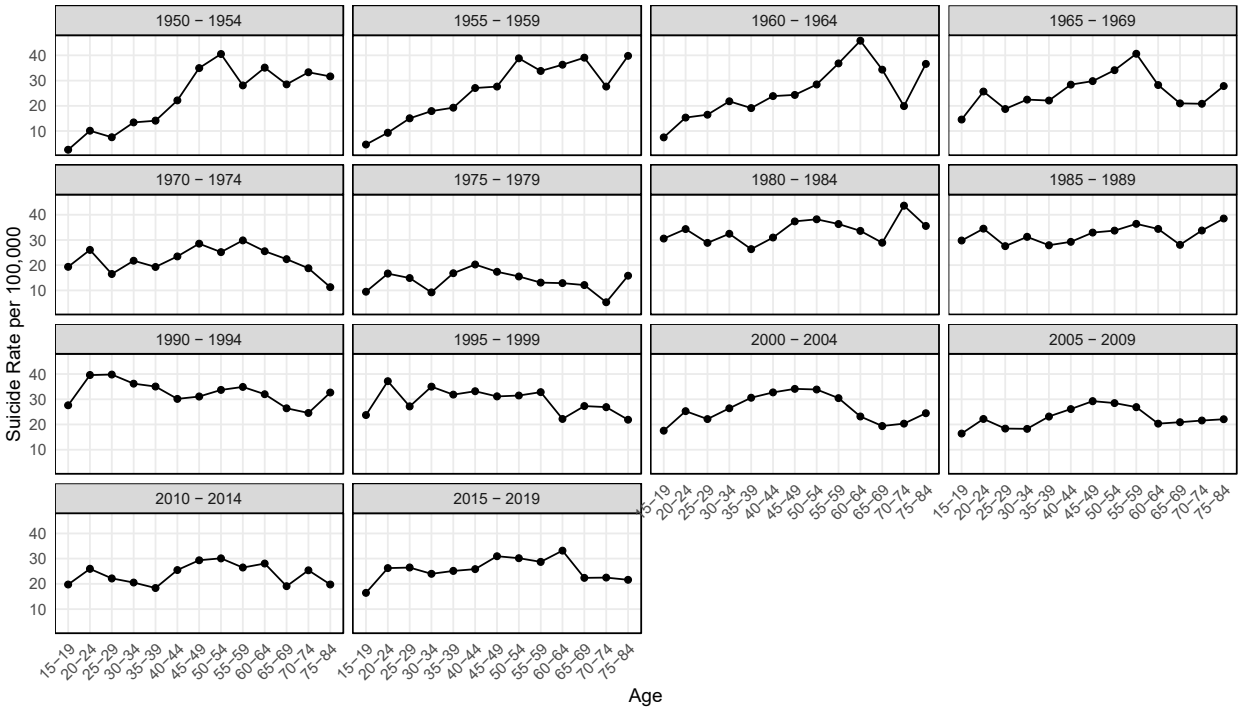

Figure 35: Suicide rates per 100,000 by period and age for males in Alberta, 1950-2019.

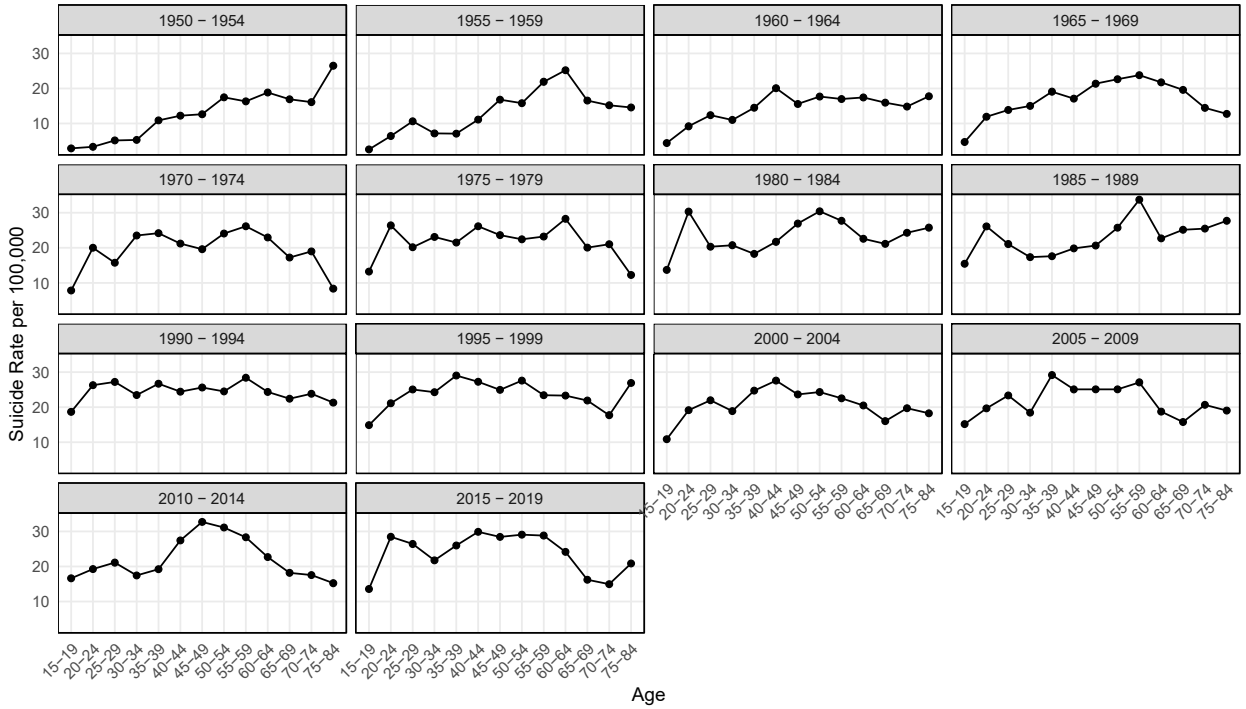

Figure 36: Suicide rates per 100,000 by period and age for males in Atlantic Canada, 1950-2019.

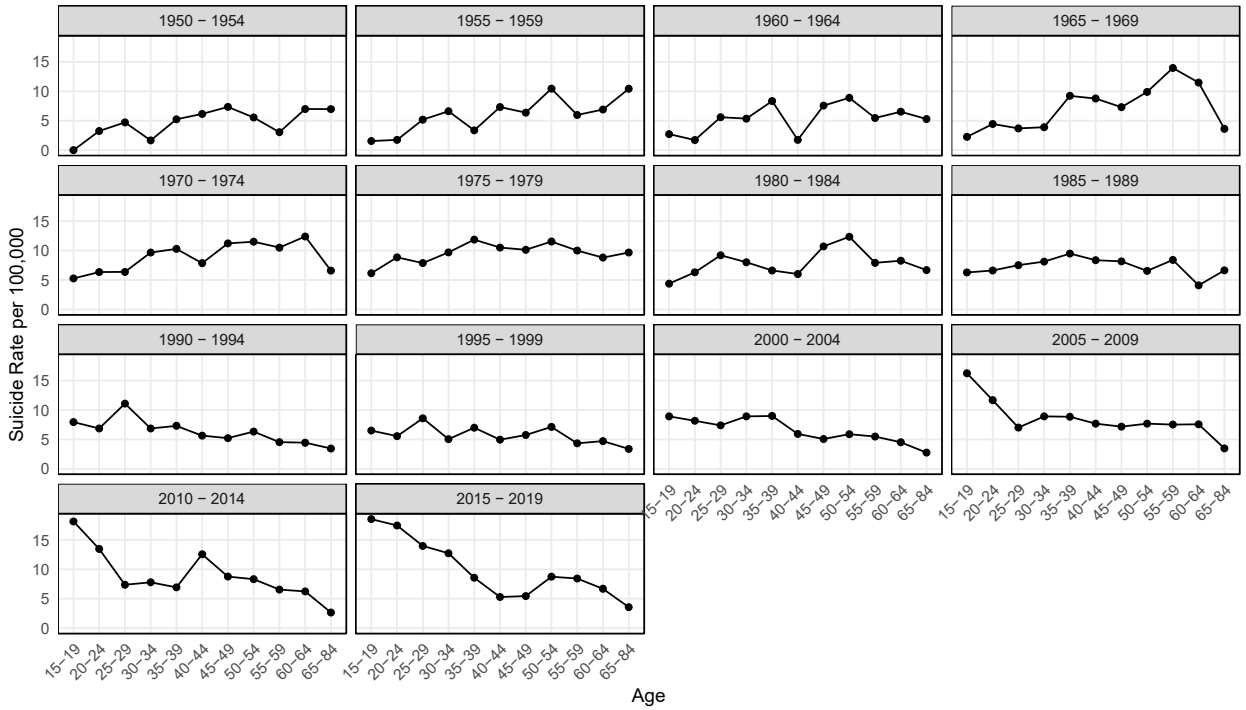

Figure 37: Suicide rates per 100,000 by period and age for females in Saskatchewan and Manitoba, 1950-2019.

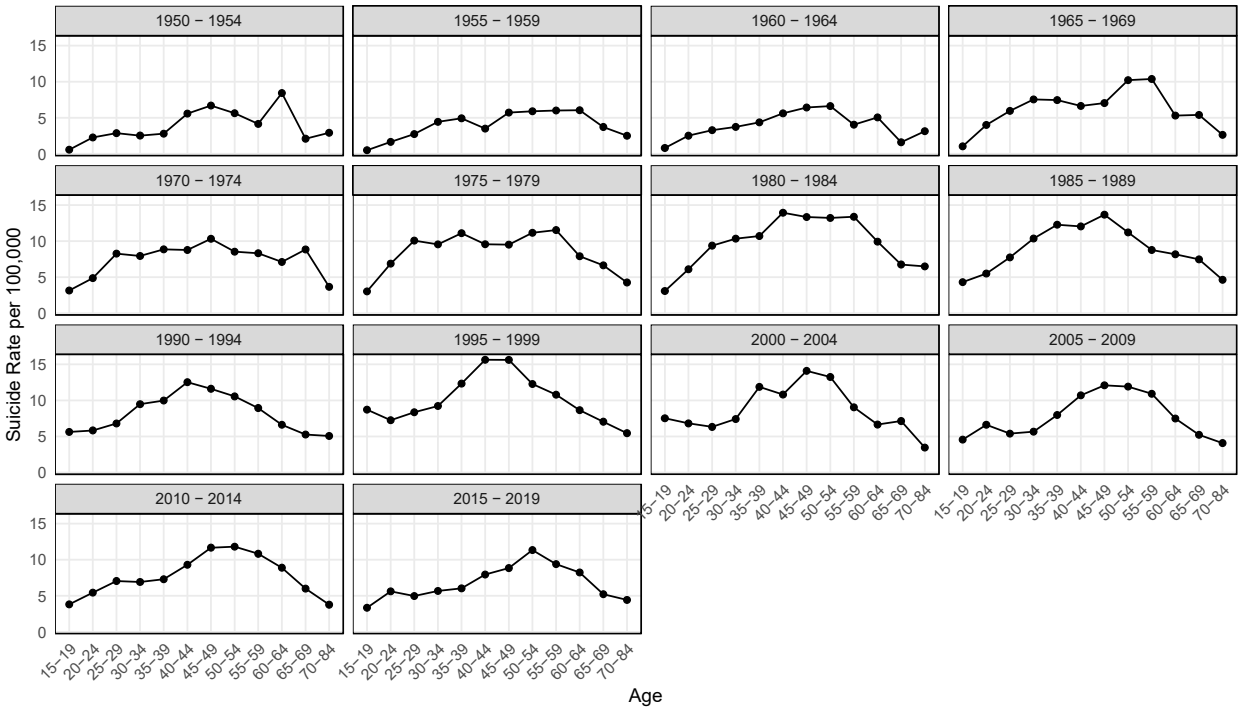

Figure 38: Suicide rates per 100,000 by period and age for females in Québec, 1950-2019.

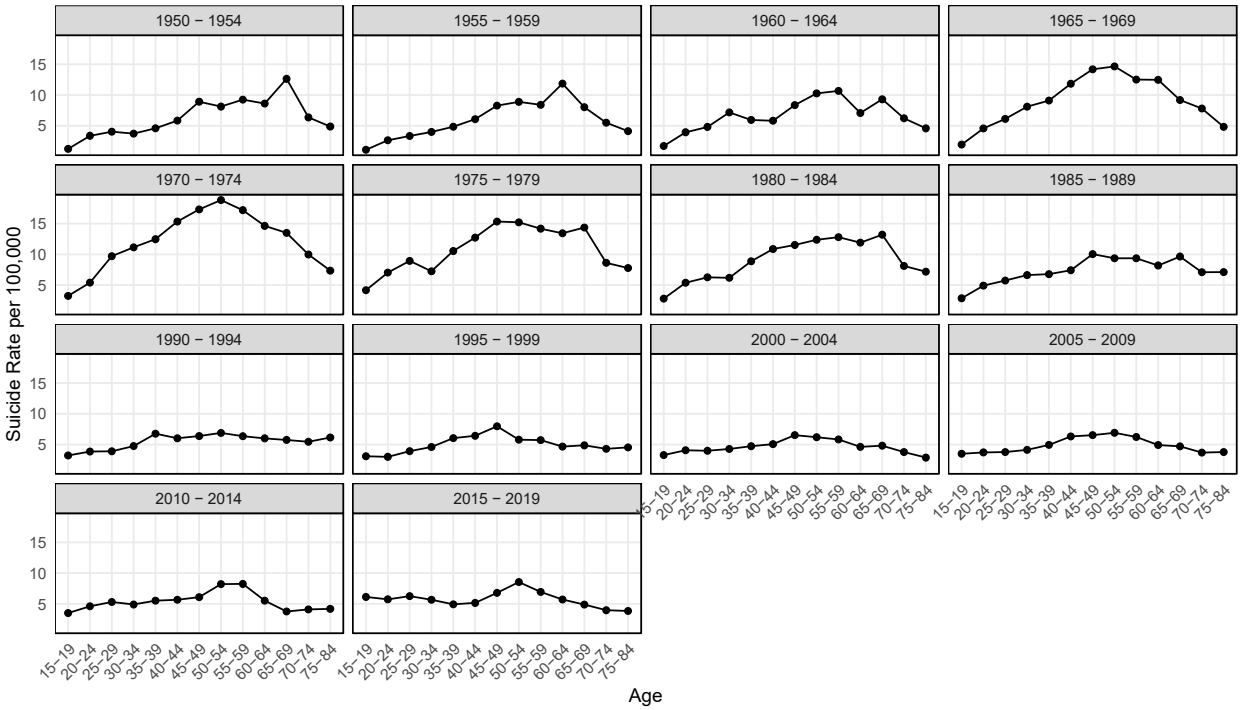

Figure 39: Suicide rates per 100,000 by period and age for females in Ontario, 1950-2019.

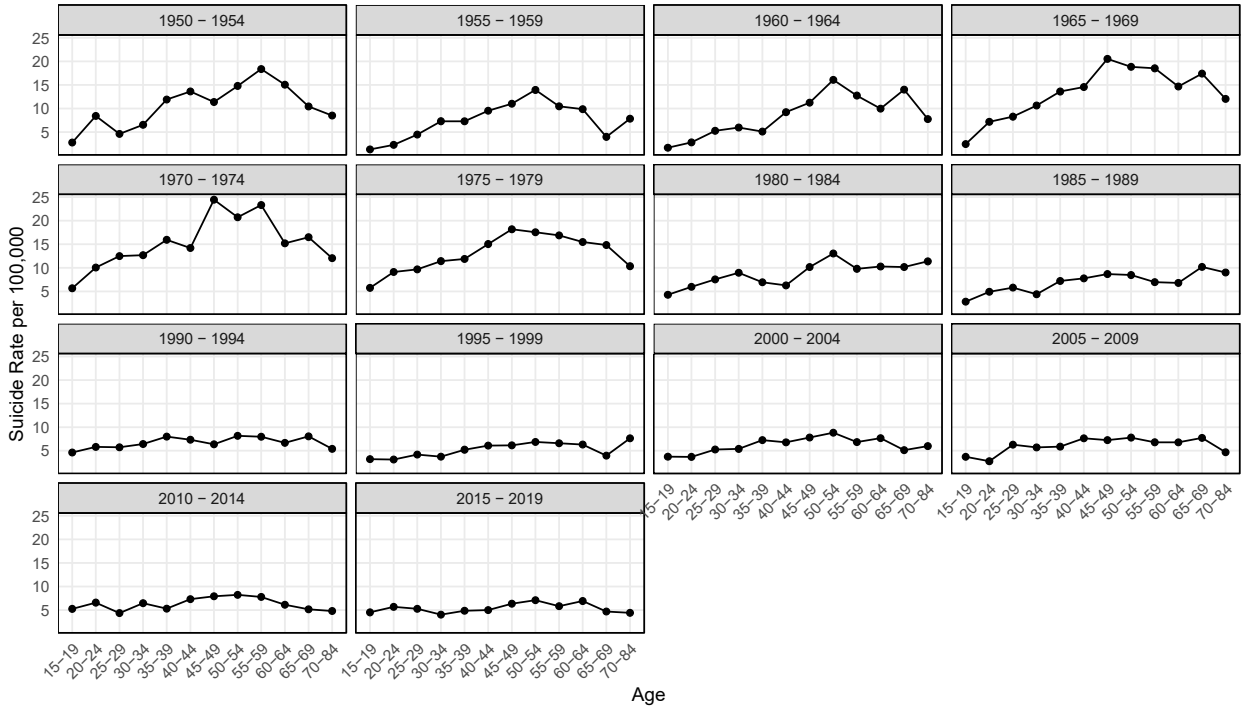

Figure 40: Suicide rates per 100,000 by period and age for females in British Columbia, 1950-2019.

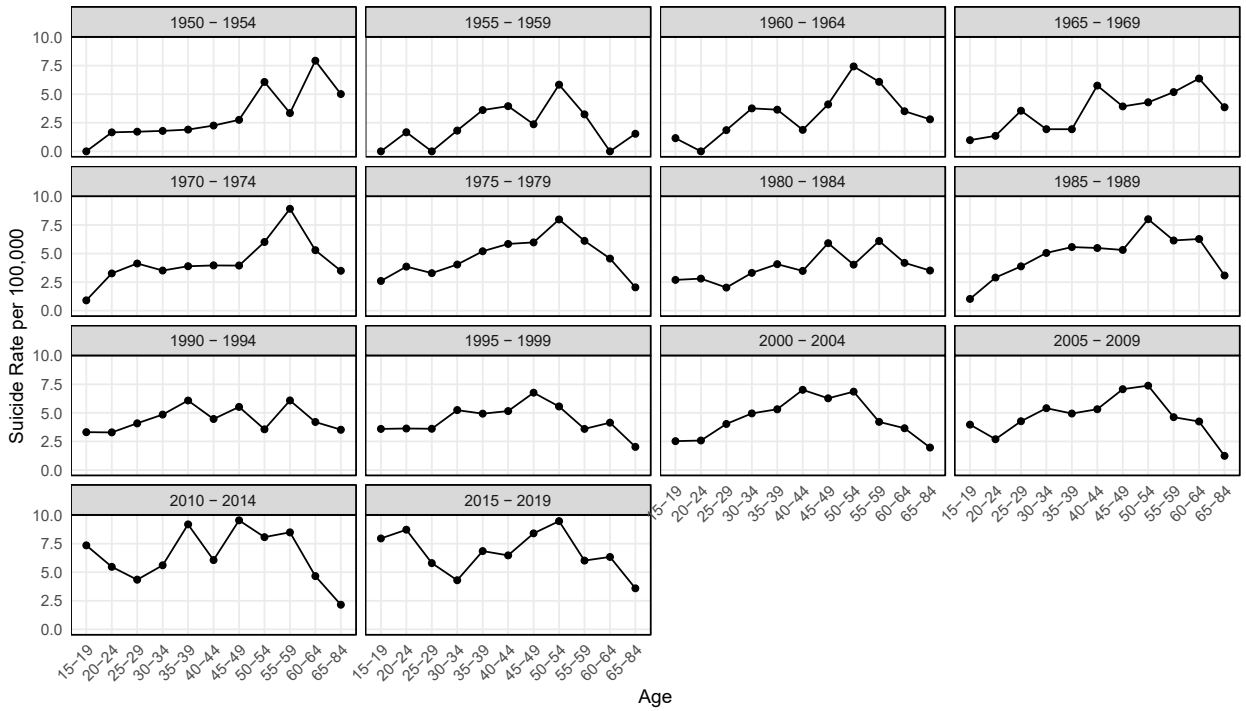

Figure 41: Suicide rates per 100,000 by period and age for females in Atlantic Canada, 1950-2019.

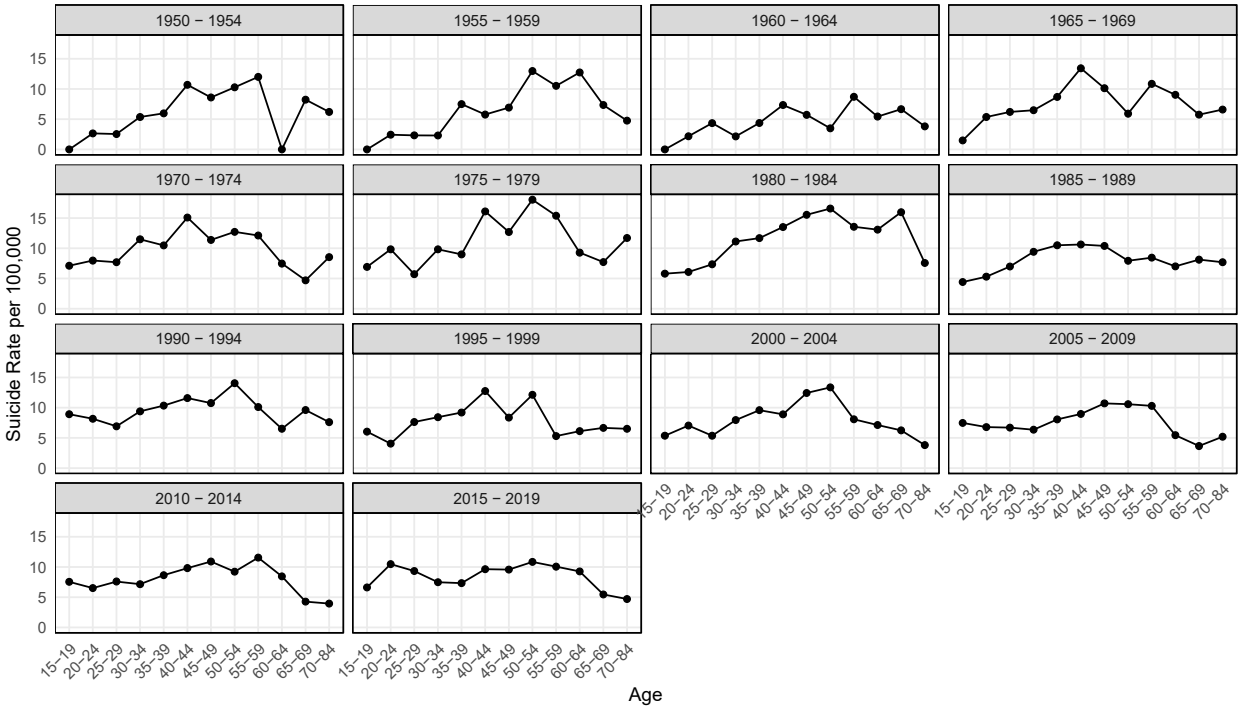

Figure 42: Suicide rates per 100,000 by period and age for females in Alberta, 1950-2019.

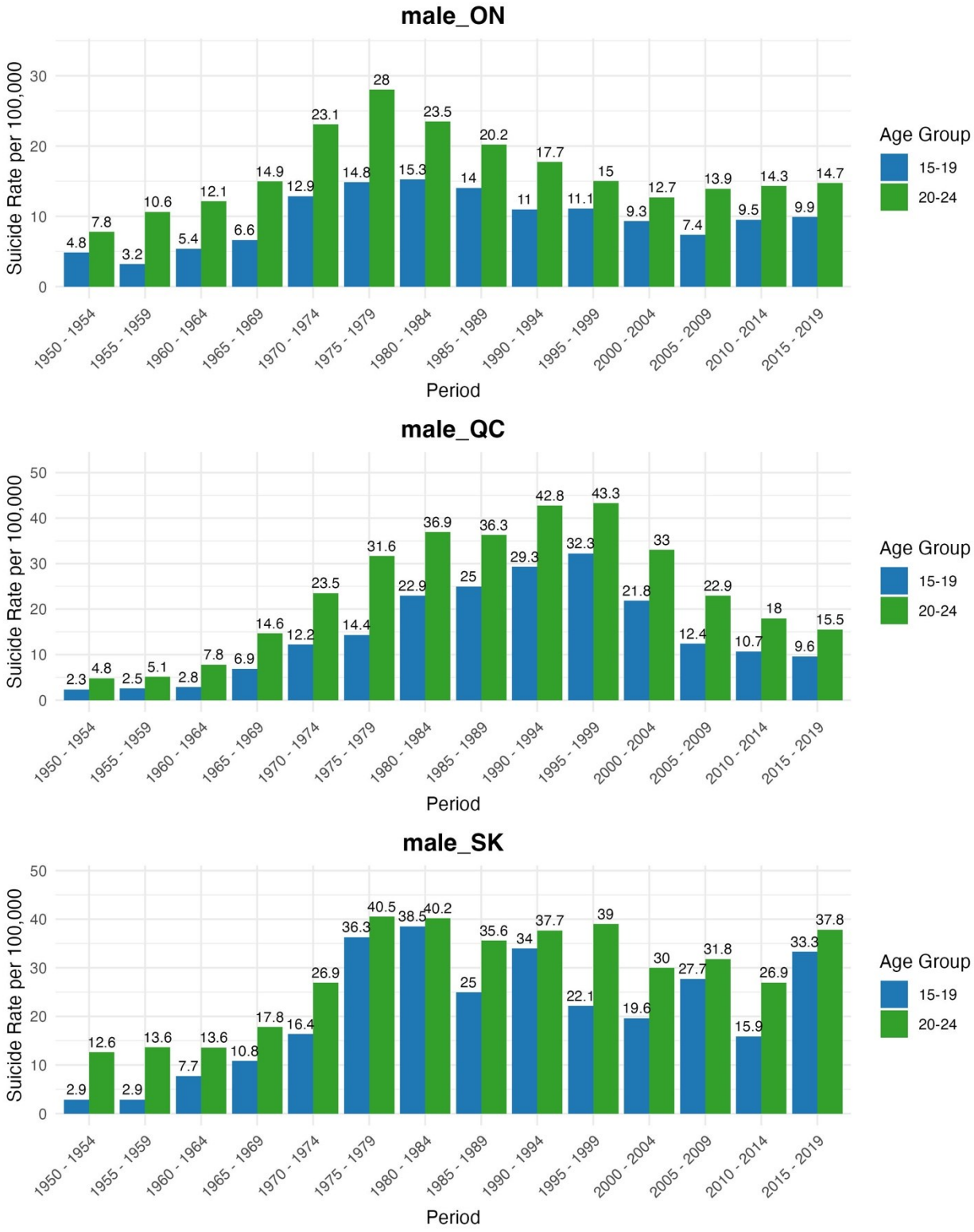

Figure 43: Youth suicide rates for 15–24-year-olds, ON, QC, and SK males.

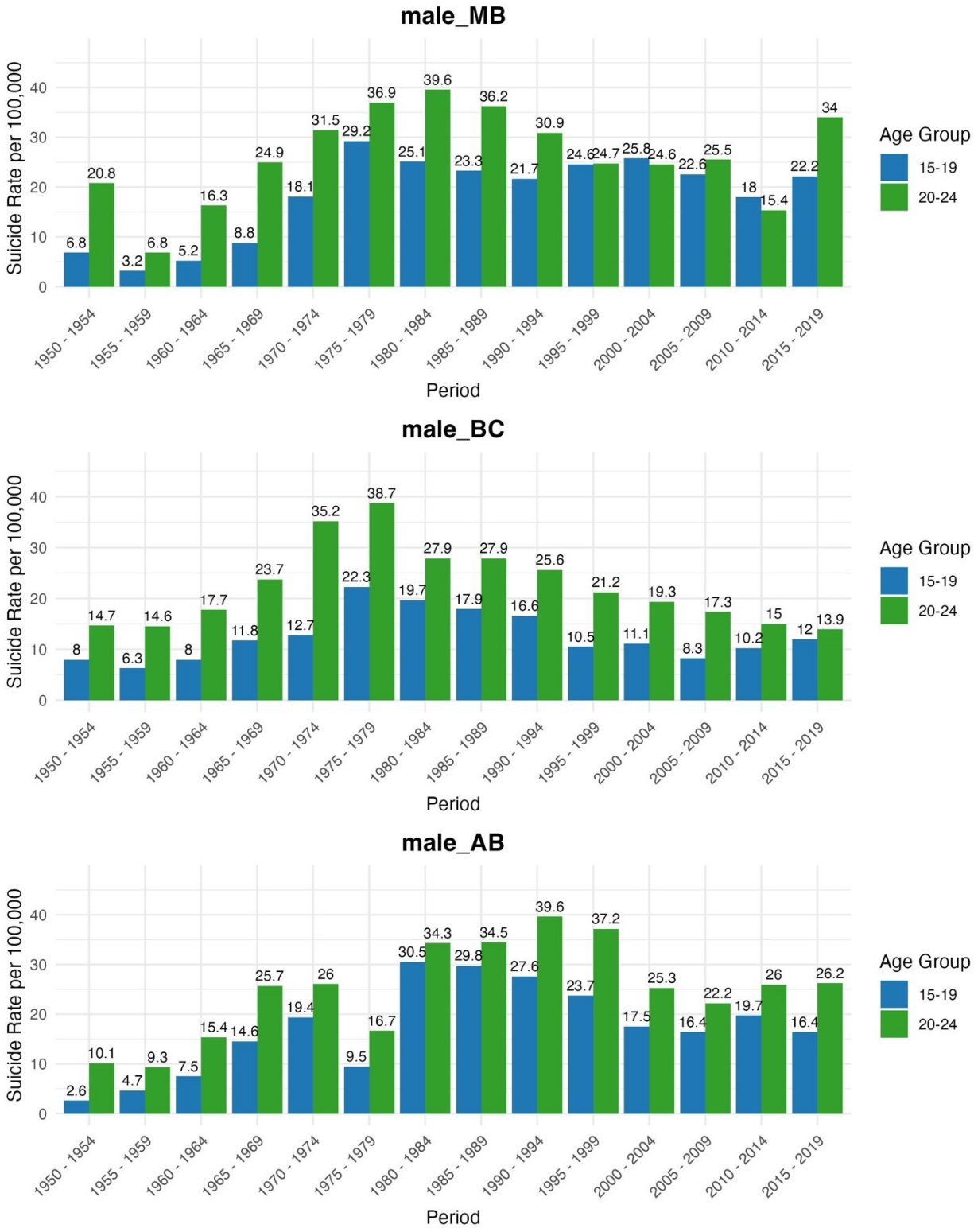

Figure 44: Youth suicide rates for 15–24-year-olds, MB, BC, and AB males.

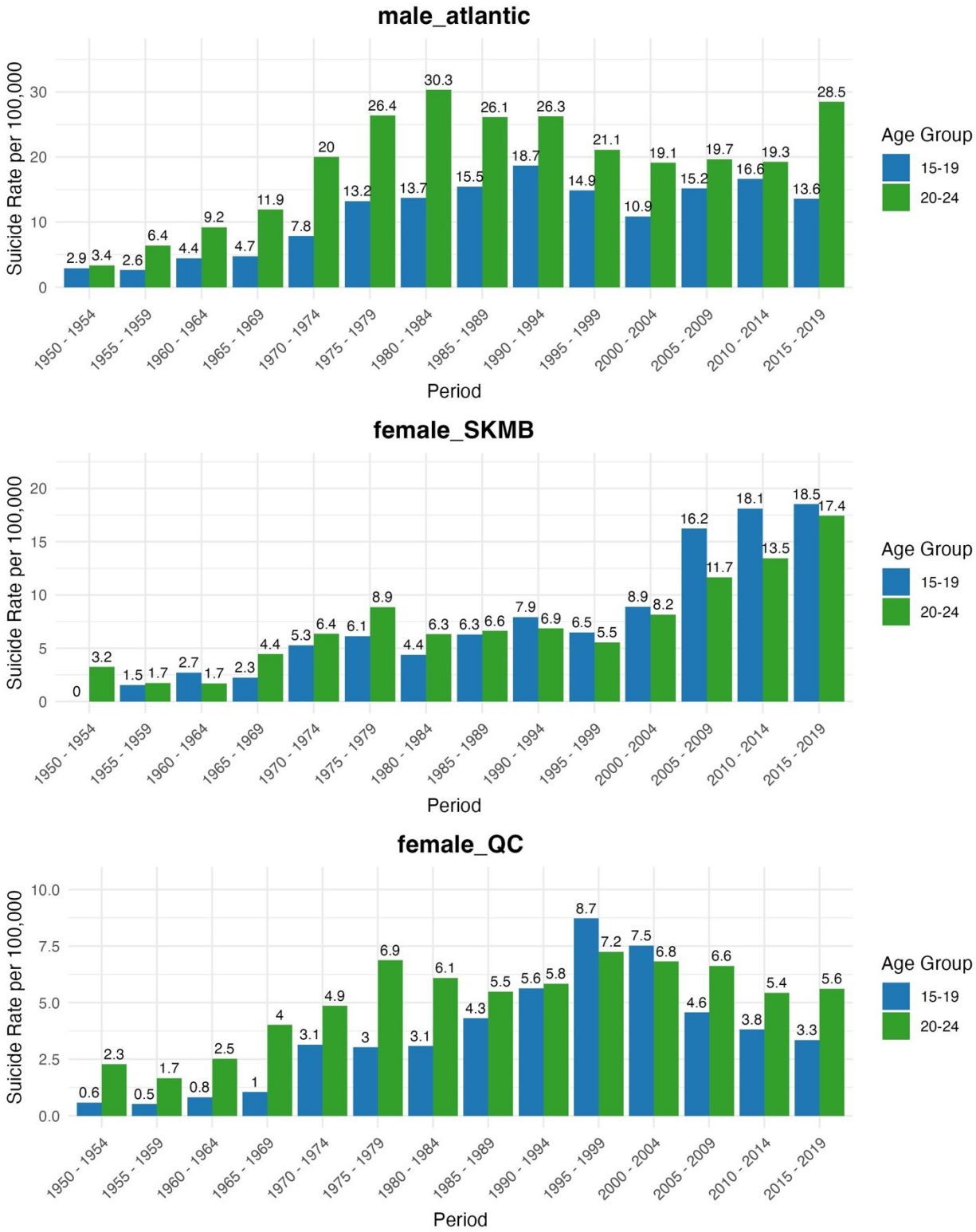

Figure 45: Youth suicide rates for 15–24-year-olds, Atlantic Canada males, and SKMB and QC females.

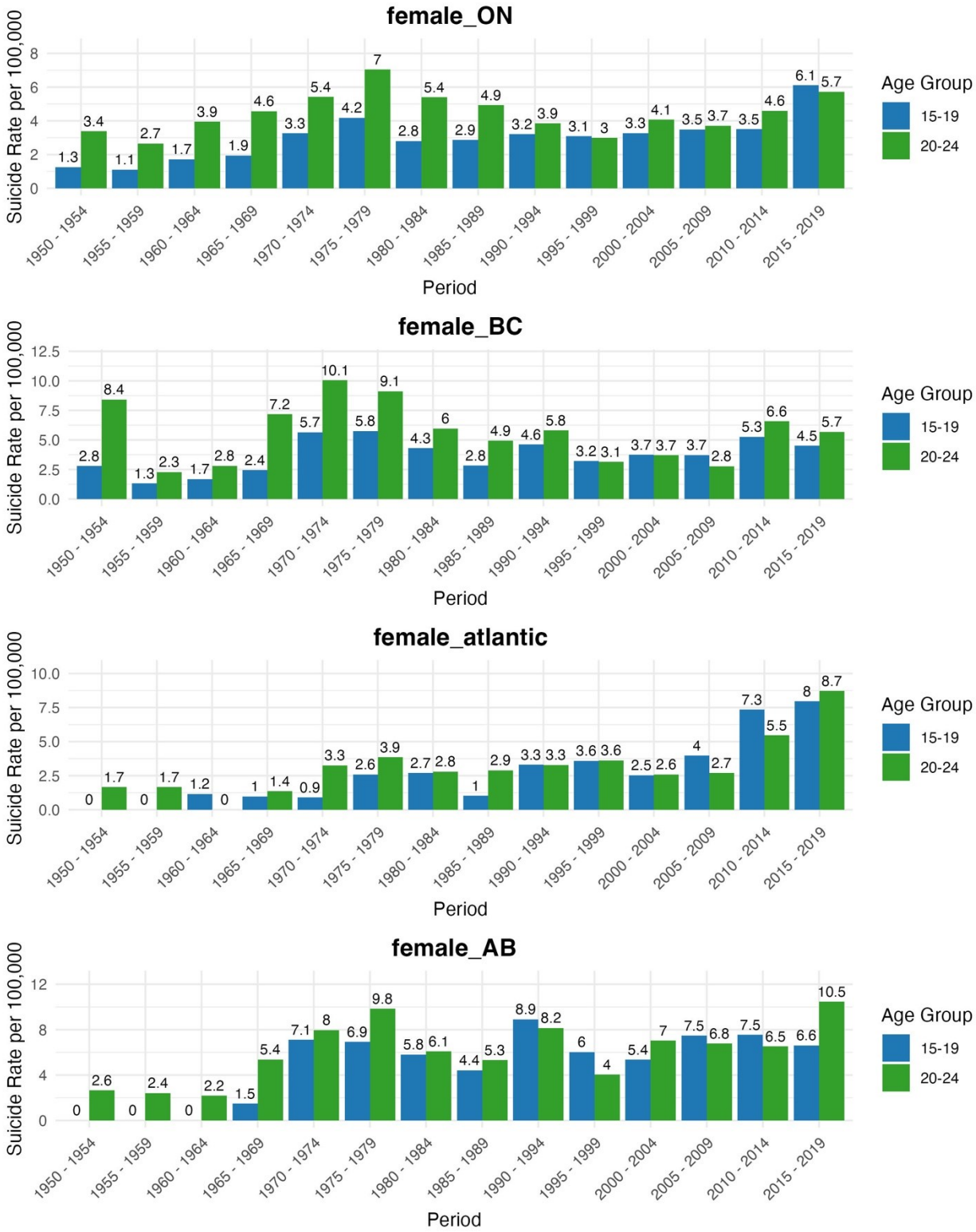

Figure 46: Youth suicide rates for 15–24-year-olds, ON, BC, Atlantic Canada, and AB females.

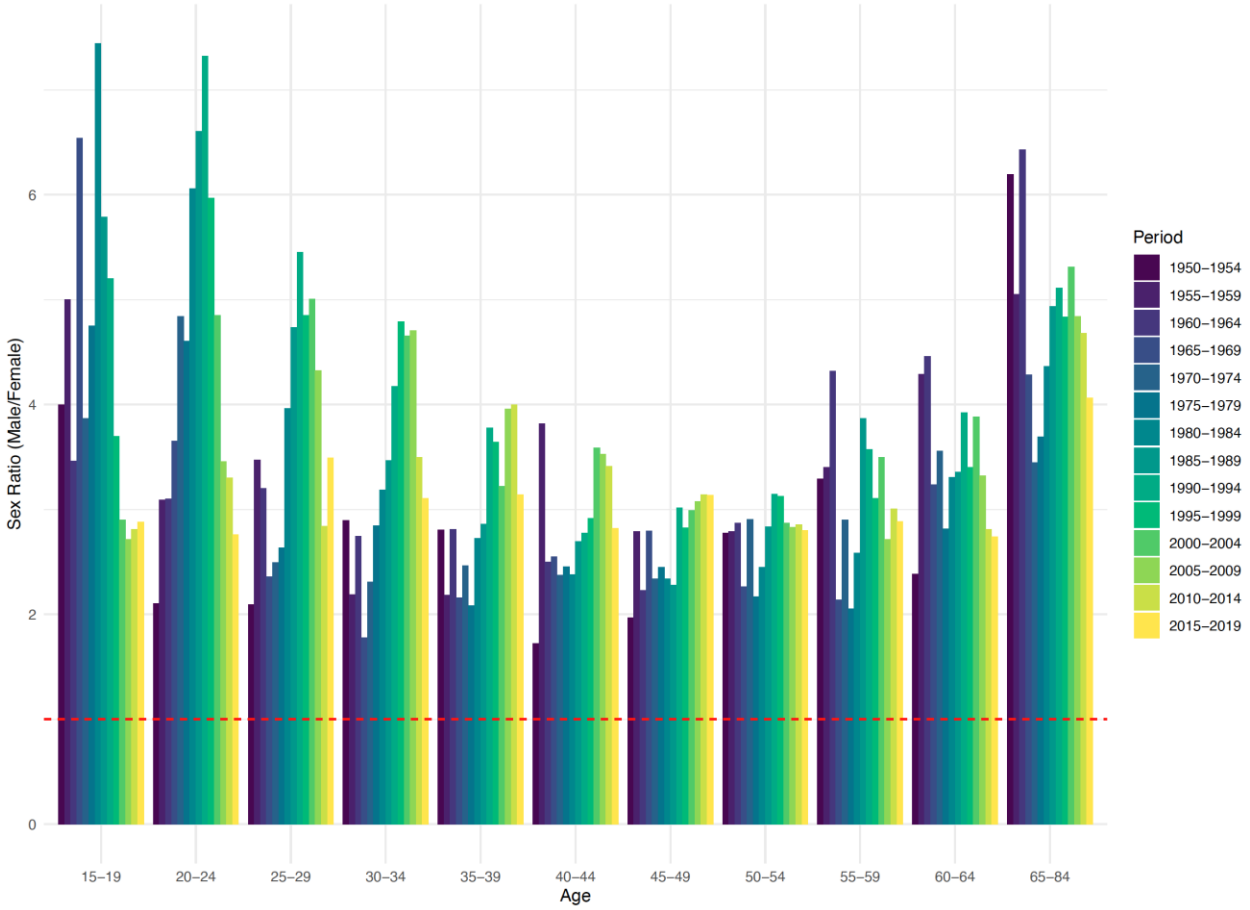

Figure 47: Sex-ratios by period and age group, in Québec.
Notes: the hashed red line indicates the y-intercept of 1, when the sex-ratio is 1:1.

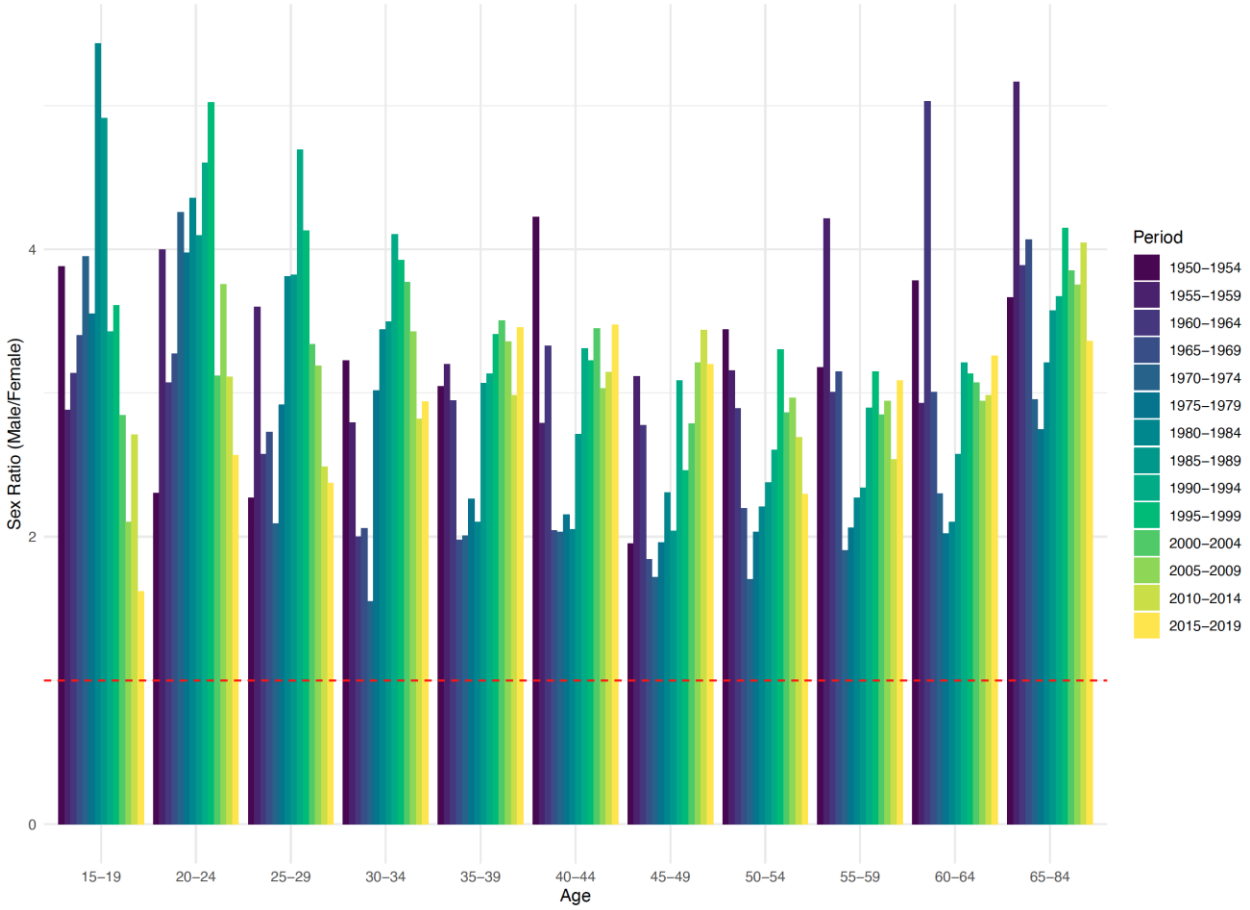

Figure 48: Sex-ratios by period and age group, in Ontario.
Notes: the hashed red line indicates the y-intercept of 1, when the sex-ratio is 1:1.

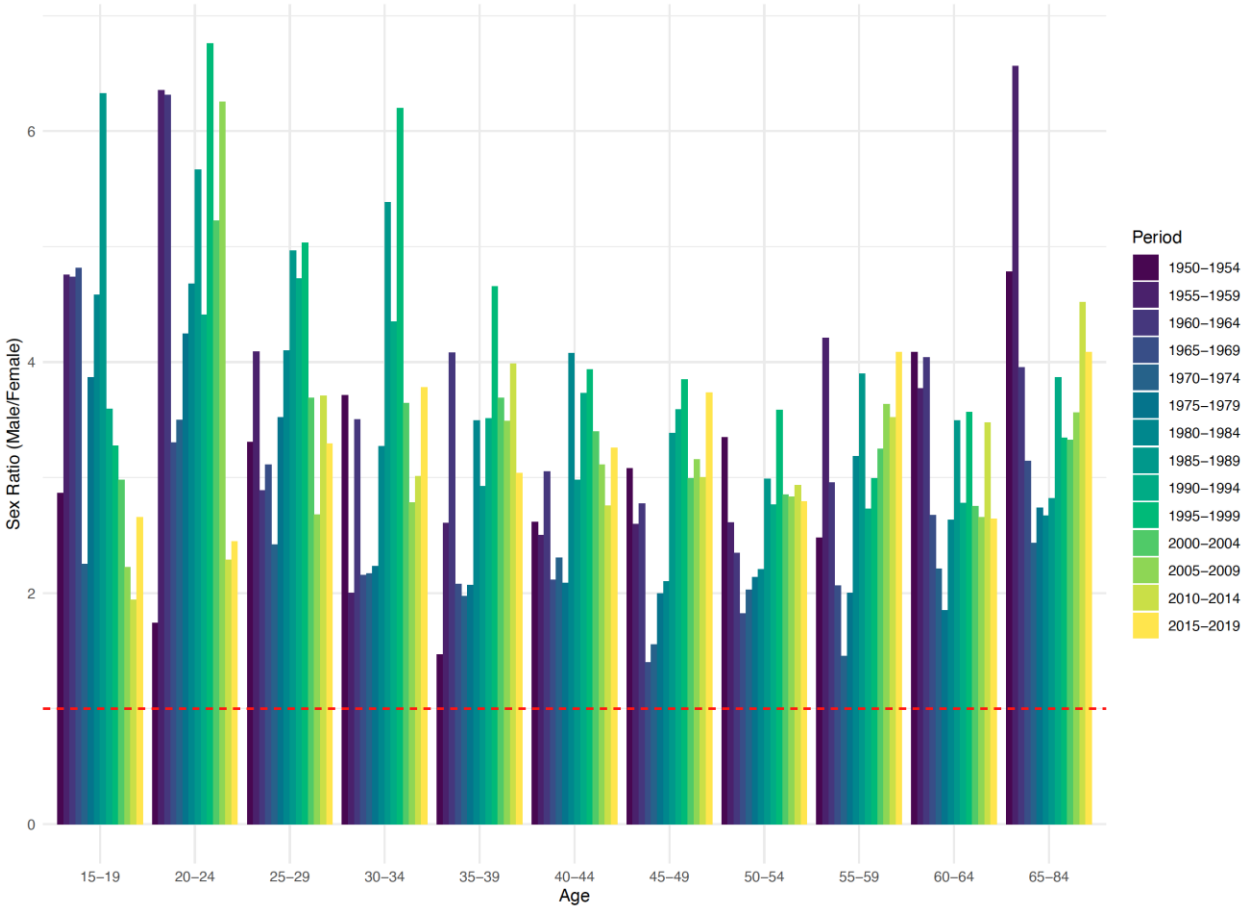

Figure 49: Sex-ratios by period and age group, in British Columbia.
Notes: the hashed red line indicates the y-intercept of 1, when the sex-ratio is 1:1.

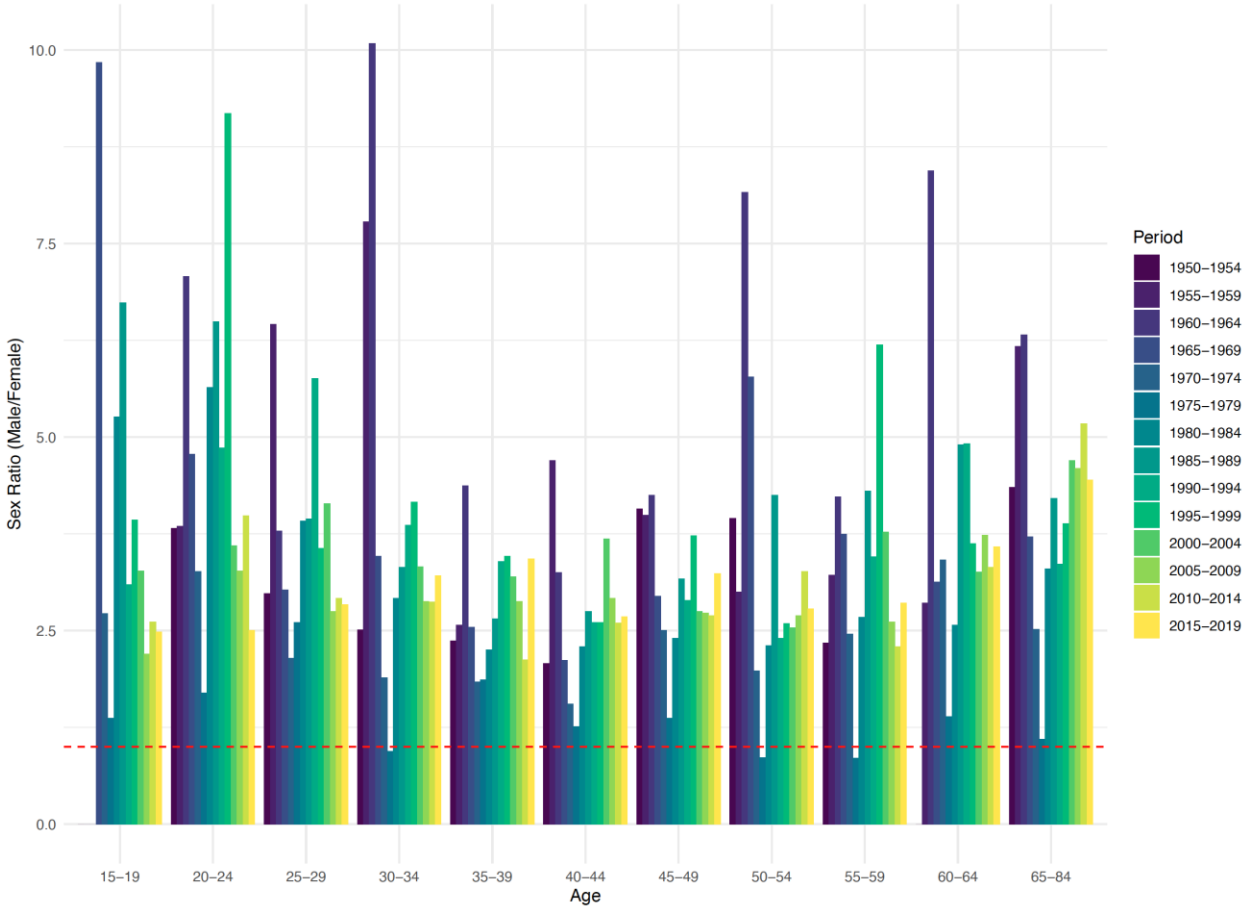

Figure 50: Sex-ratios by period and age group, in Alberta.
Notes: the hashed red line indicates the y-intercept of 1, when the sex-ratio is 1:1.

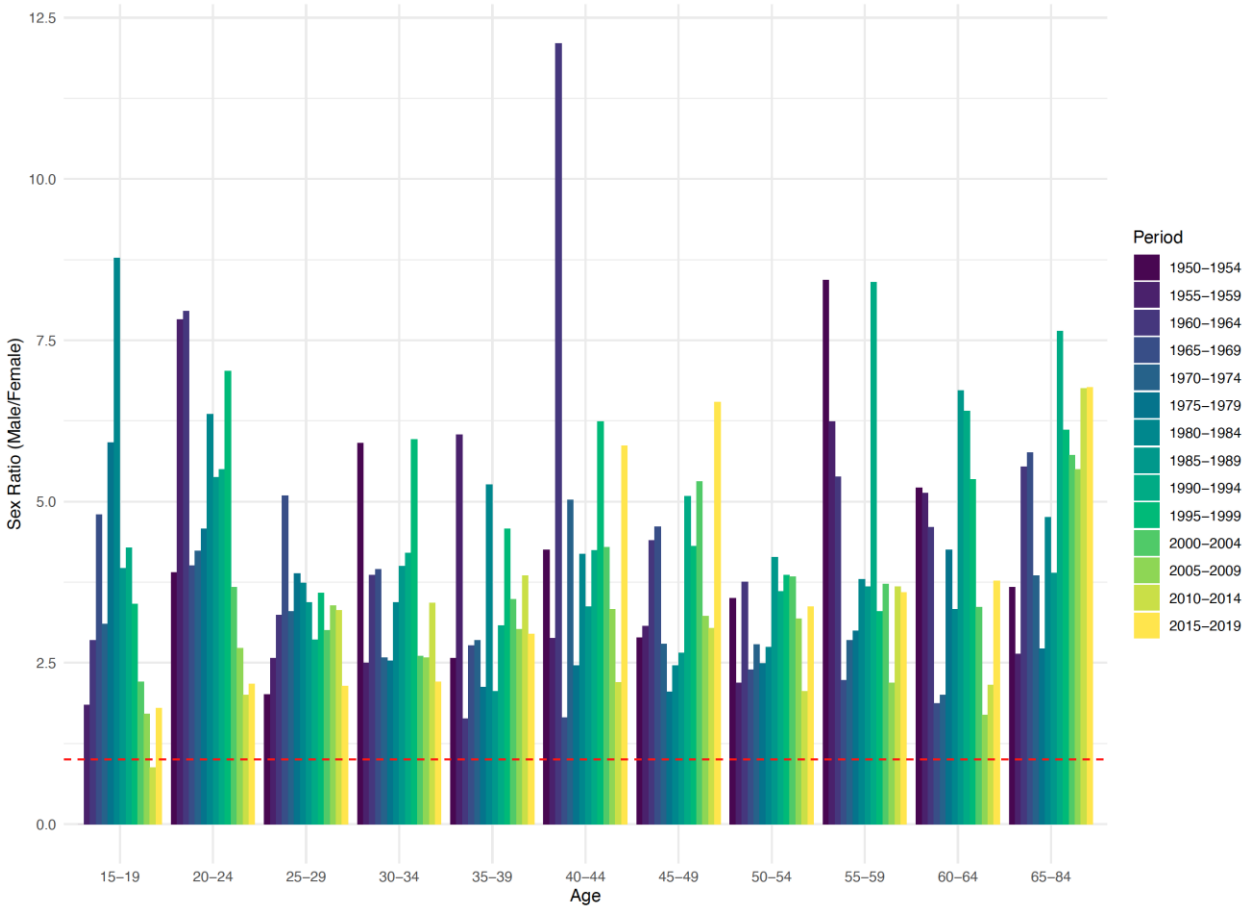

Figure 51: Sex-ratios by period and age group, in Saskatchewan.
Notes: the hashed red line indicates the y-intercept of 1, when the sex-ratio is 1:1.

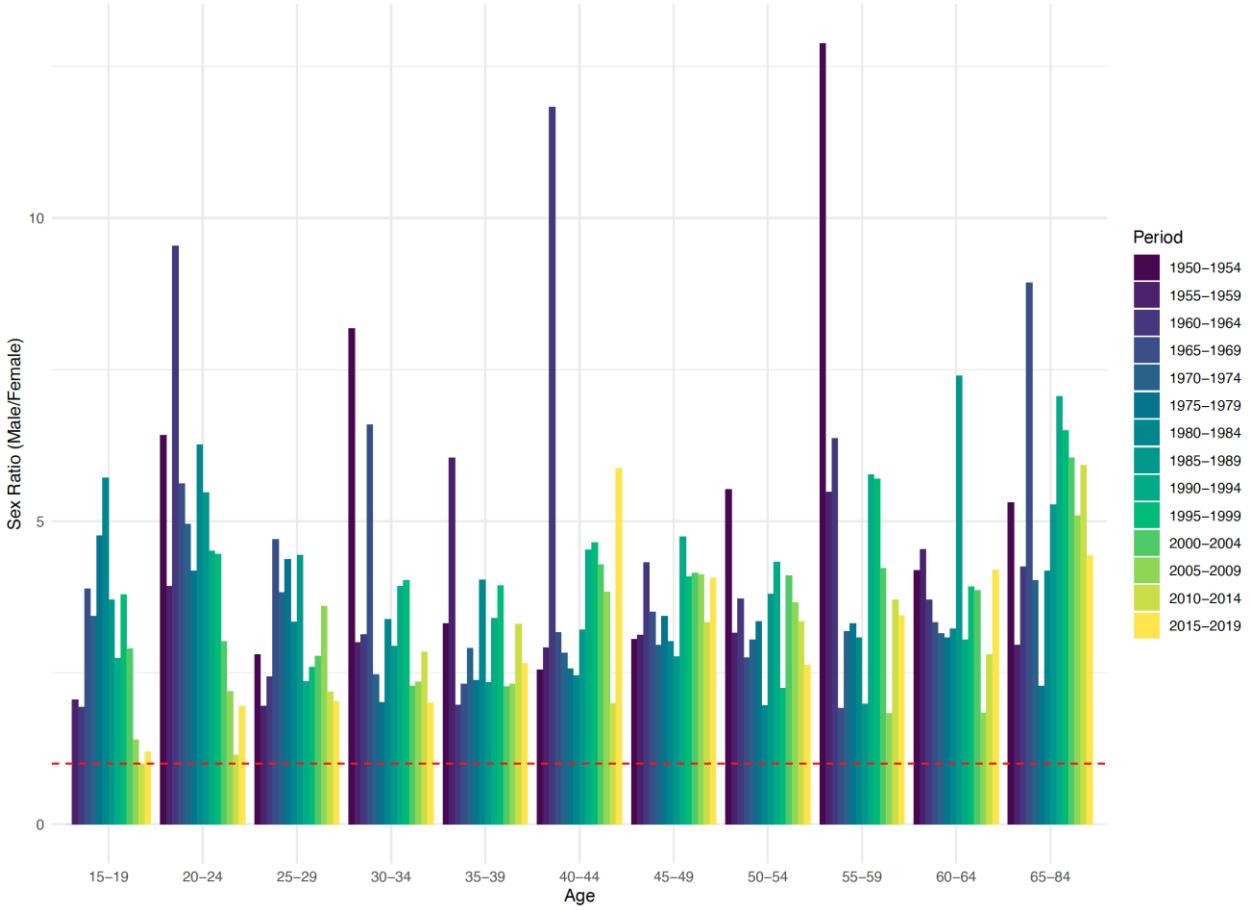

Figure 52: Sex-ratios by period and age group, in Manitoba.
Notes: the hashed red line indicates the y-intercept of 1, when the sex-ratio is 1:1.

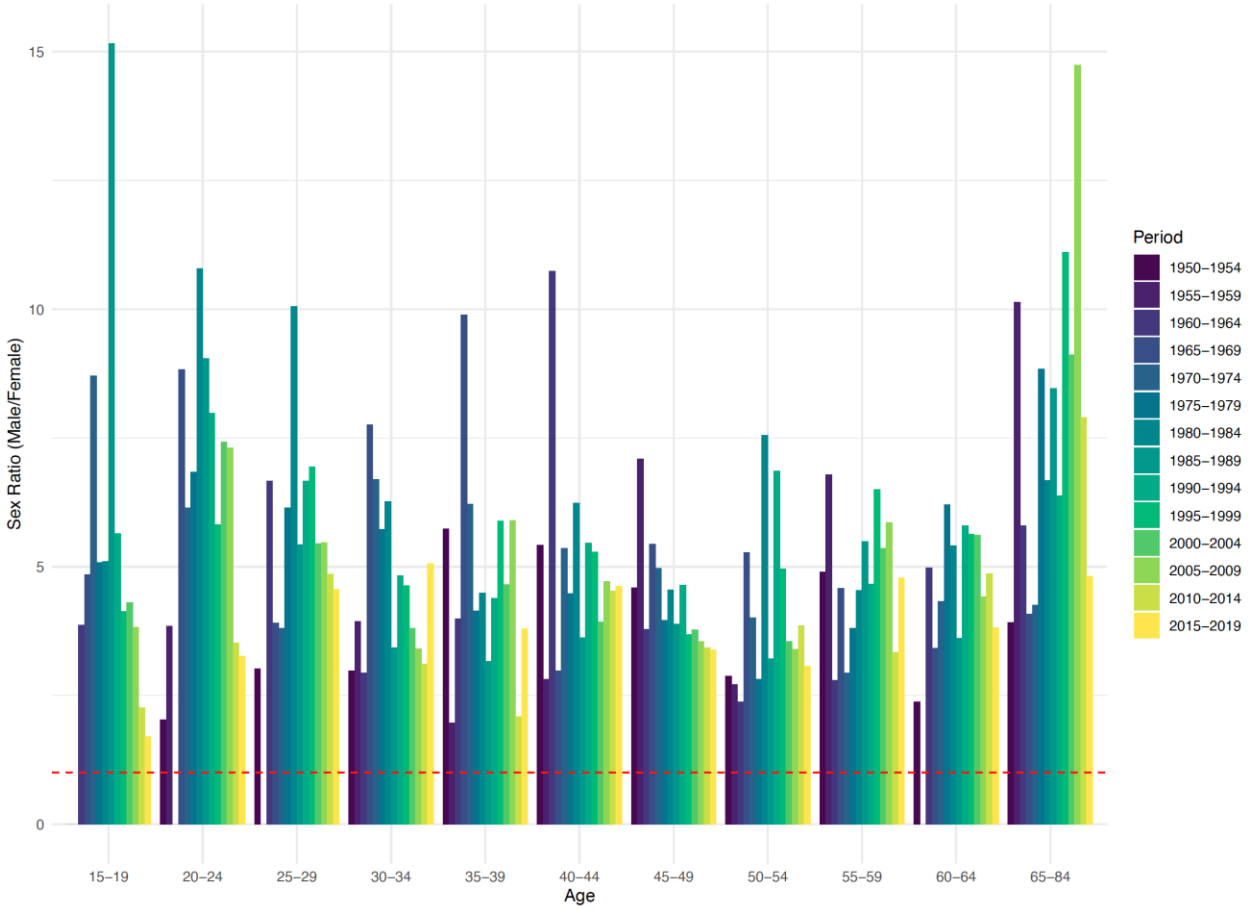

Figure 53: Sex-ratios by period and age group, in Atlantic Canada.
Notes: the hashed red line indicates the y-intercept of 1, when the sex-ratio is 1:1.

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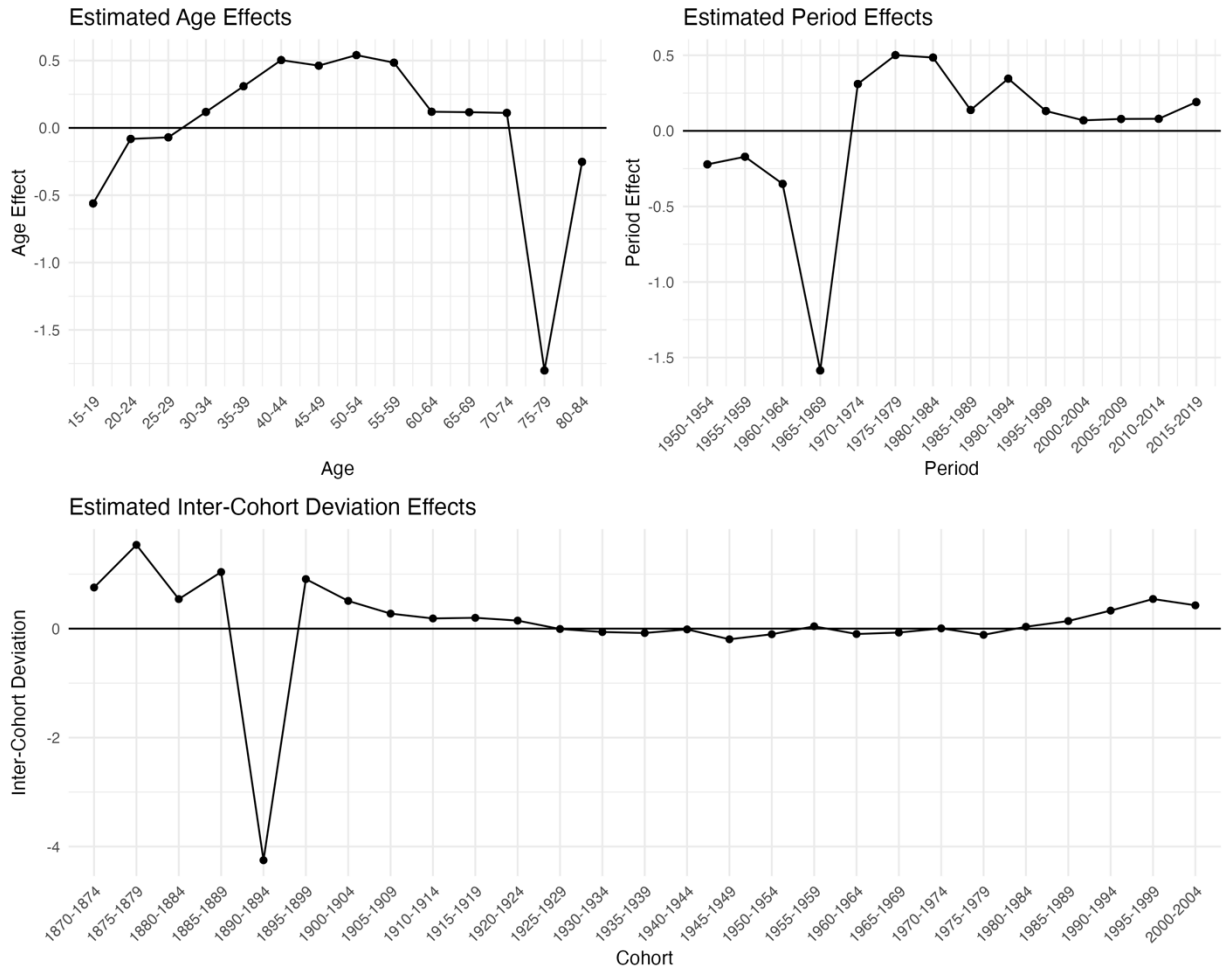

Figure 54: Estimated age, period, and inter-cohort deviation effects for females in Alberta.
Notes: The horizontal y-intercept of 0 indicates no deviation from the global mean for Age and Period effects. For Cohort effects, it represents no deviation from the suicide rates predicted by age and period main effects only.

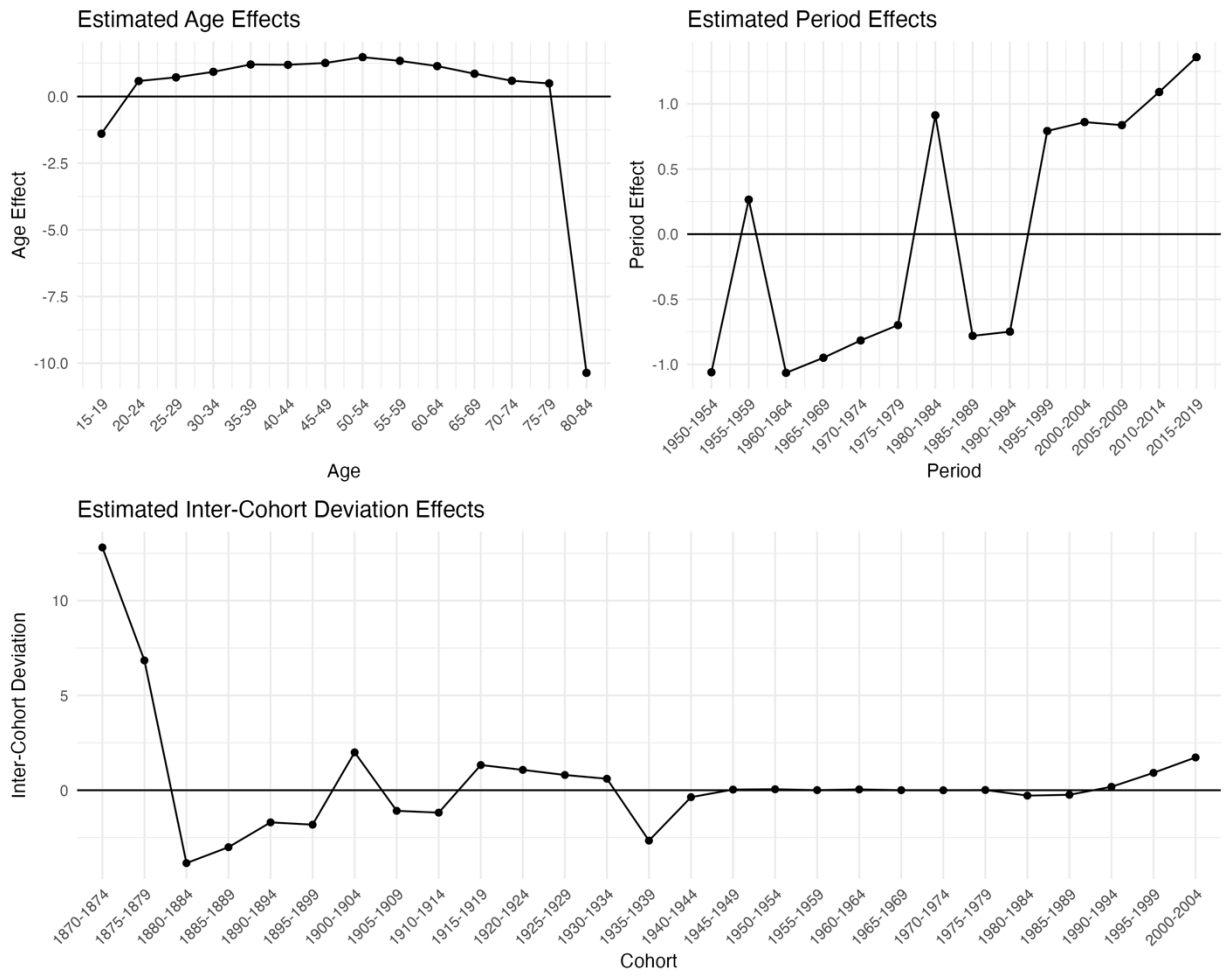

Figure 55: Estimated age, period, and inter-cohort deviation effects for females in Atlantic Canada.
Notes: The horizontal y-intercept of 0 indicates no deviation from the global mean for Age and Period effects. For Cohort effects, it represents no deviation from the suicide rates predicted by age and period main effects only.

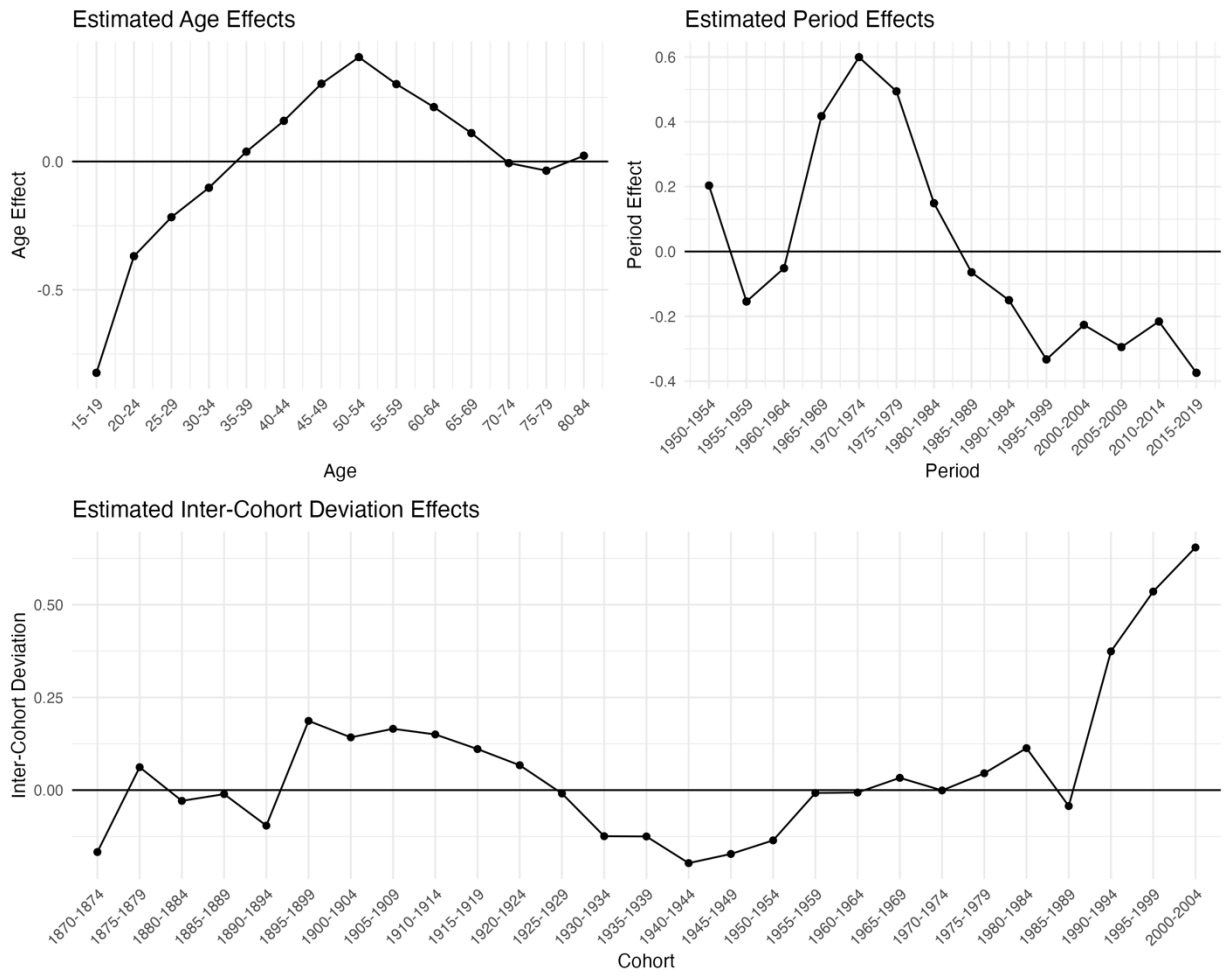

Figure 56: Estimated age, period, and inter-cohort deviation effects for females in British Columbia.
Notes: The horizontal y-intercept of 0 indicates no deviation from the global mean for Age and Period effects. For Cohort effects, it represents no deviation from the suicide rates predicted by age and period main effects only.

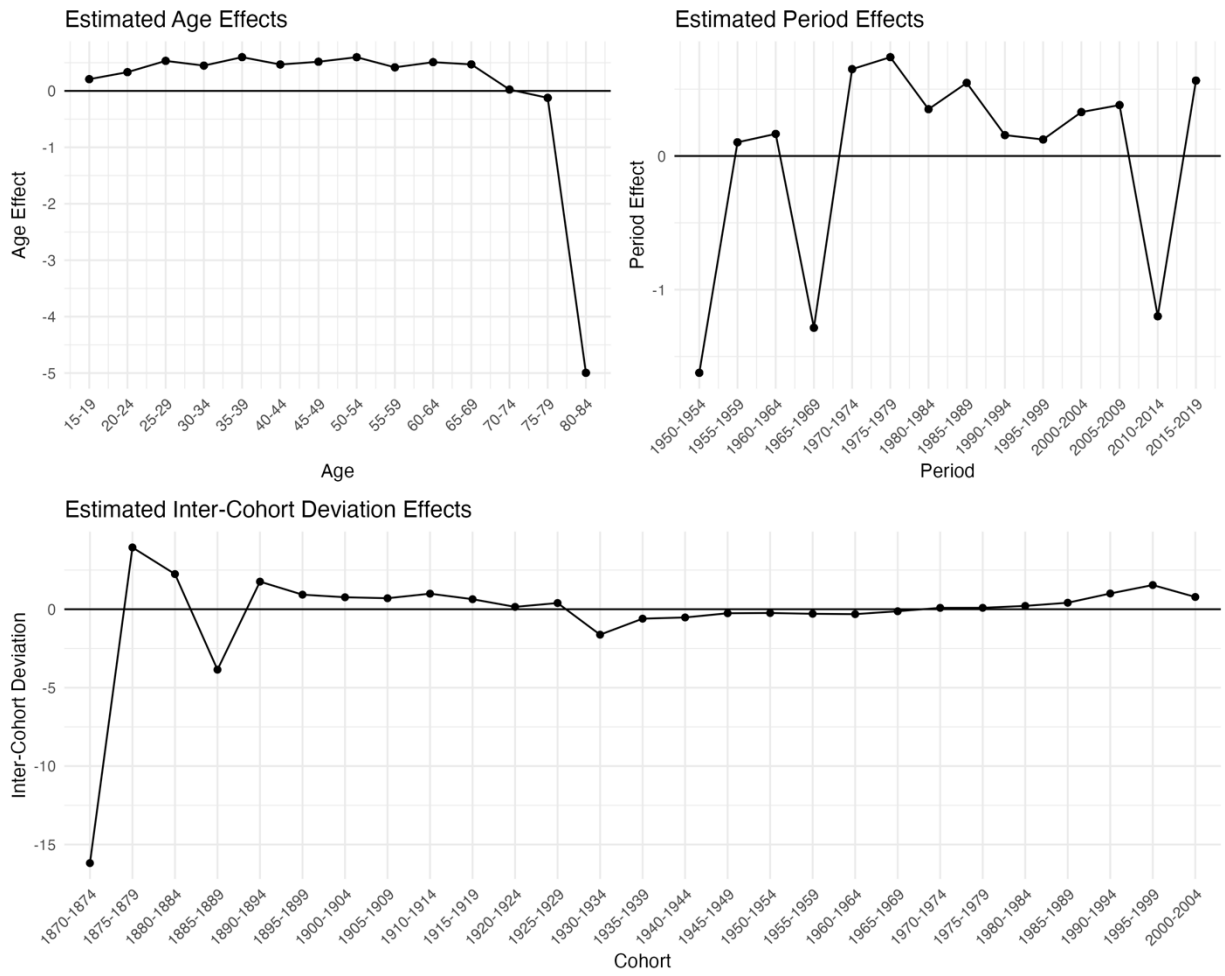

Figure 57: Estimated age, period, and inter-cohort deviation effects for females in Manitoba.
Notes: The horizontal y-intercept of 0 indicates no deviation from the global mean for Age and Period effects. For Cohort effects, it represents no deviation from the suicide rates predicted by age and period main effects only.

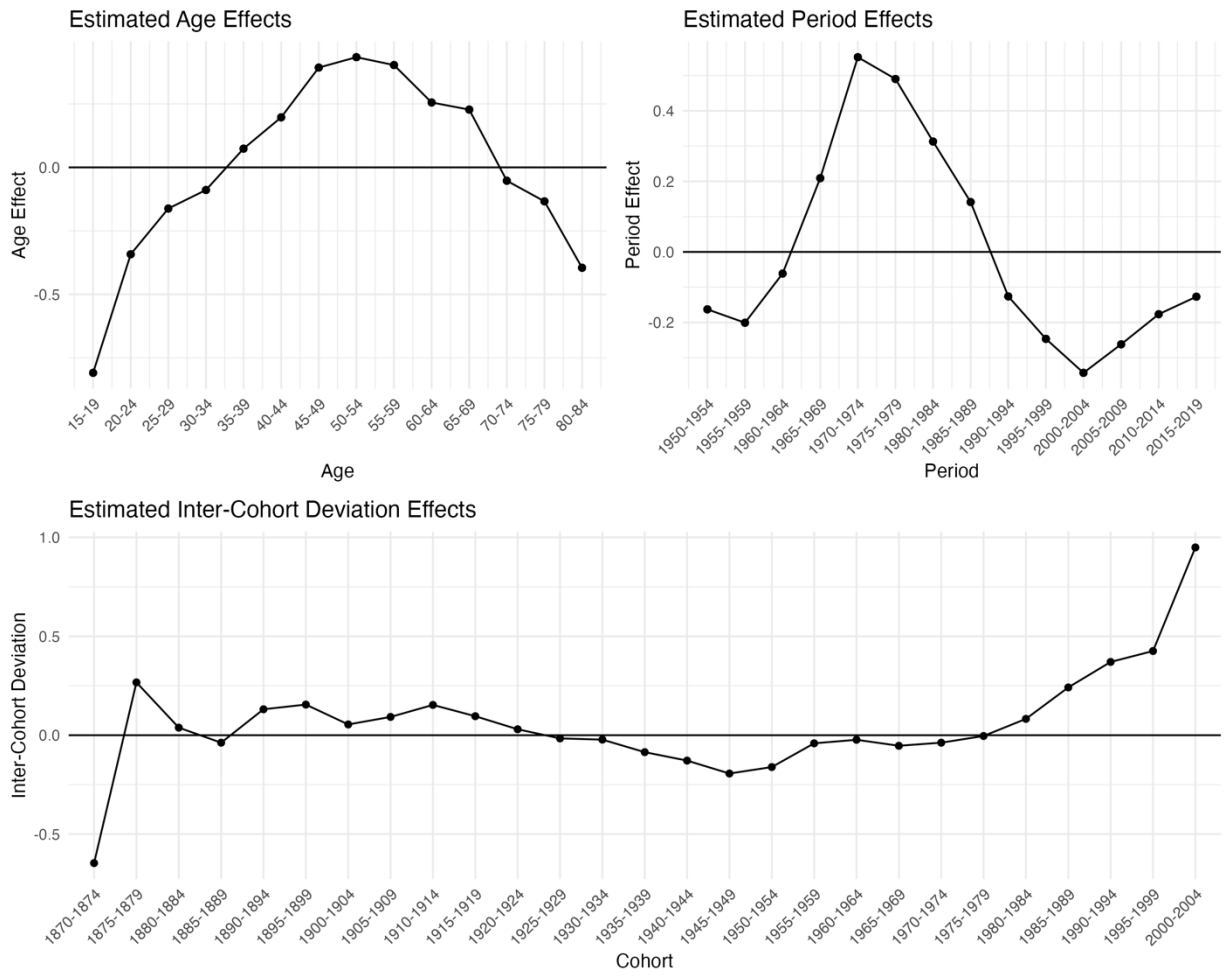

Figure 58: Estimated age, period, and inter-cohort deviation effects for females in Ontario.
Notes: The horizontal y-intercept of 0 indicates no deviation from the global mean for Age and Period effects. For Cohort effects, it represents no deviation from the suicide rates predicted by age and period main effects only.

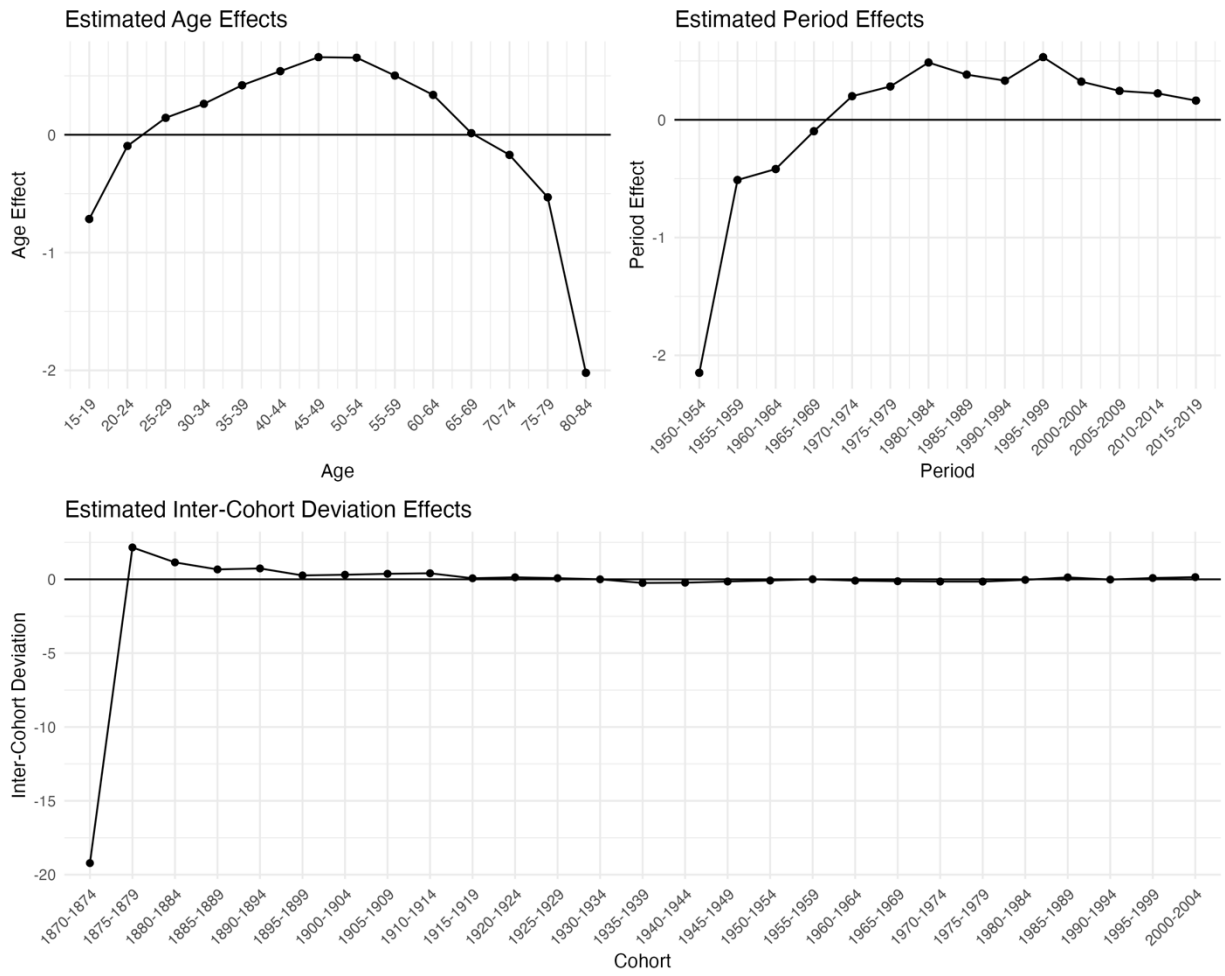

Figure 59: Estimated age, period, and inter-cohort deviation effects for females in Québec.
Notes: The horizontal y-intercept of 0 indicates no deviation from the global mean for Age and Period effects. For Cohort effects, it represents no deviation from the suicide rates predicted by age and period main effects only.

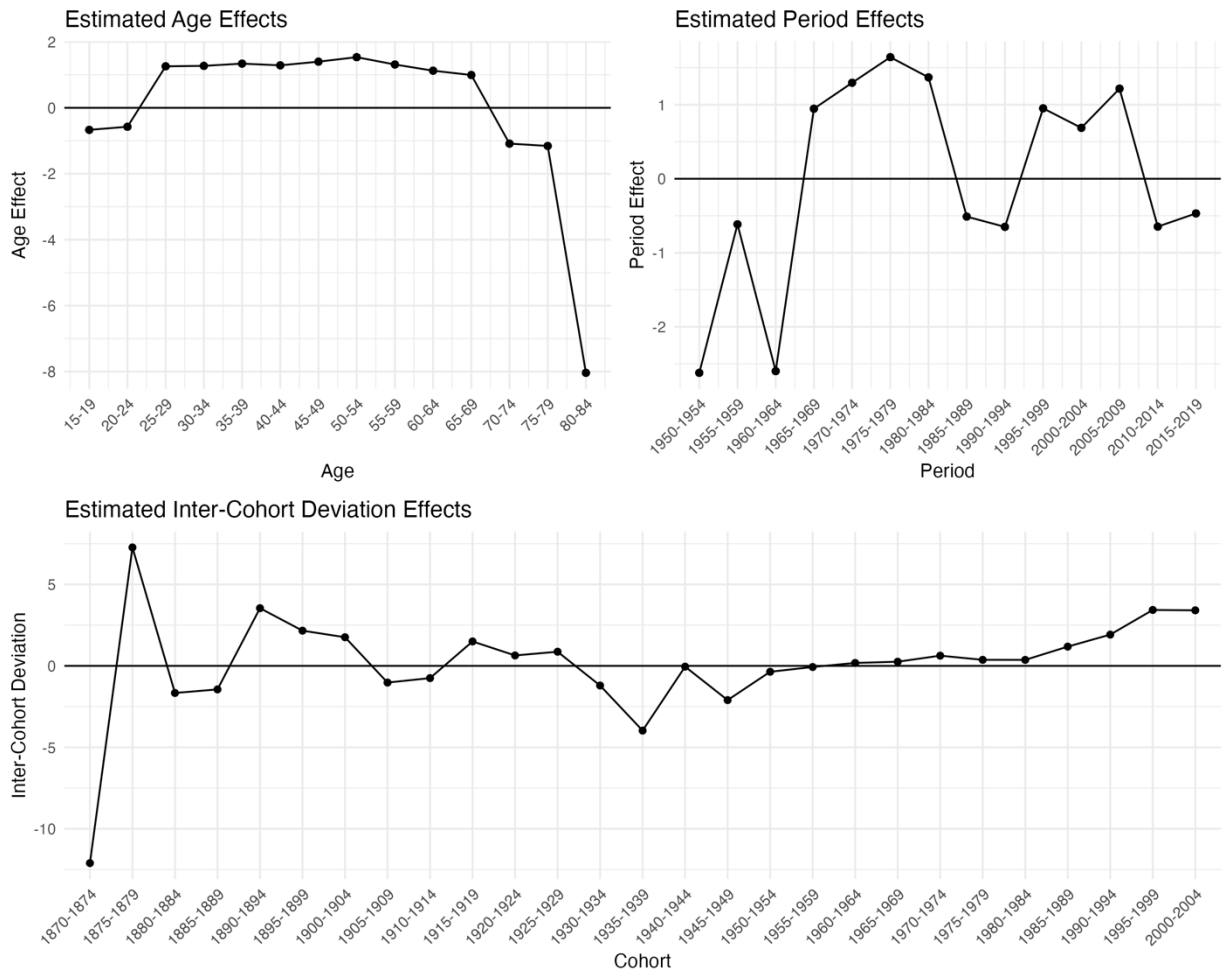

Figure 60: Estimated age, period, and inter-cohort deviation effects for females in Saskatchewan.
Notes: The horizontal y-intercept of 0 indicates no deviation from the global mean for Age and Period effects. For Cohort effects, it represents no deviation from the suicide rates predicted by age and period main effects only.

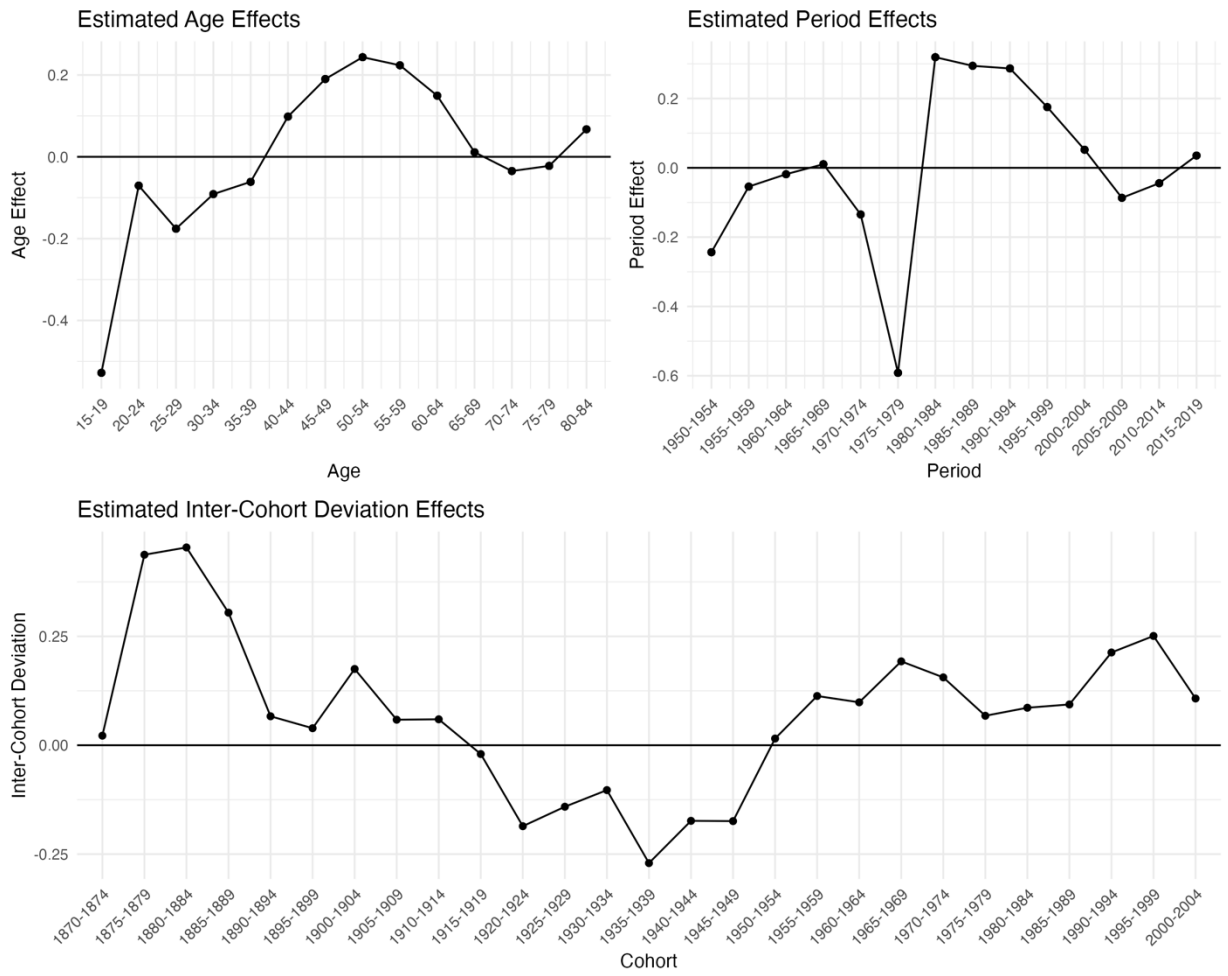

Figure 61: Estimated age, period, and inter-cohort deviation effects for males in Alberta.
Notes: The horizontal y-intercept of 0 indicates no deviation from the global mean for Age and Period effects. For Cohort effects, it represents no deviation from the suicide rates predicted by age and period main effects only.

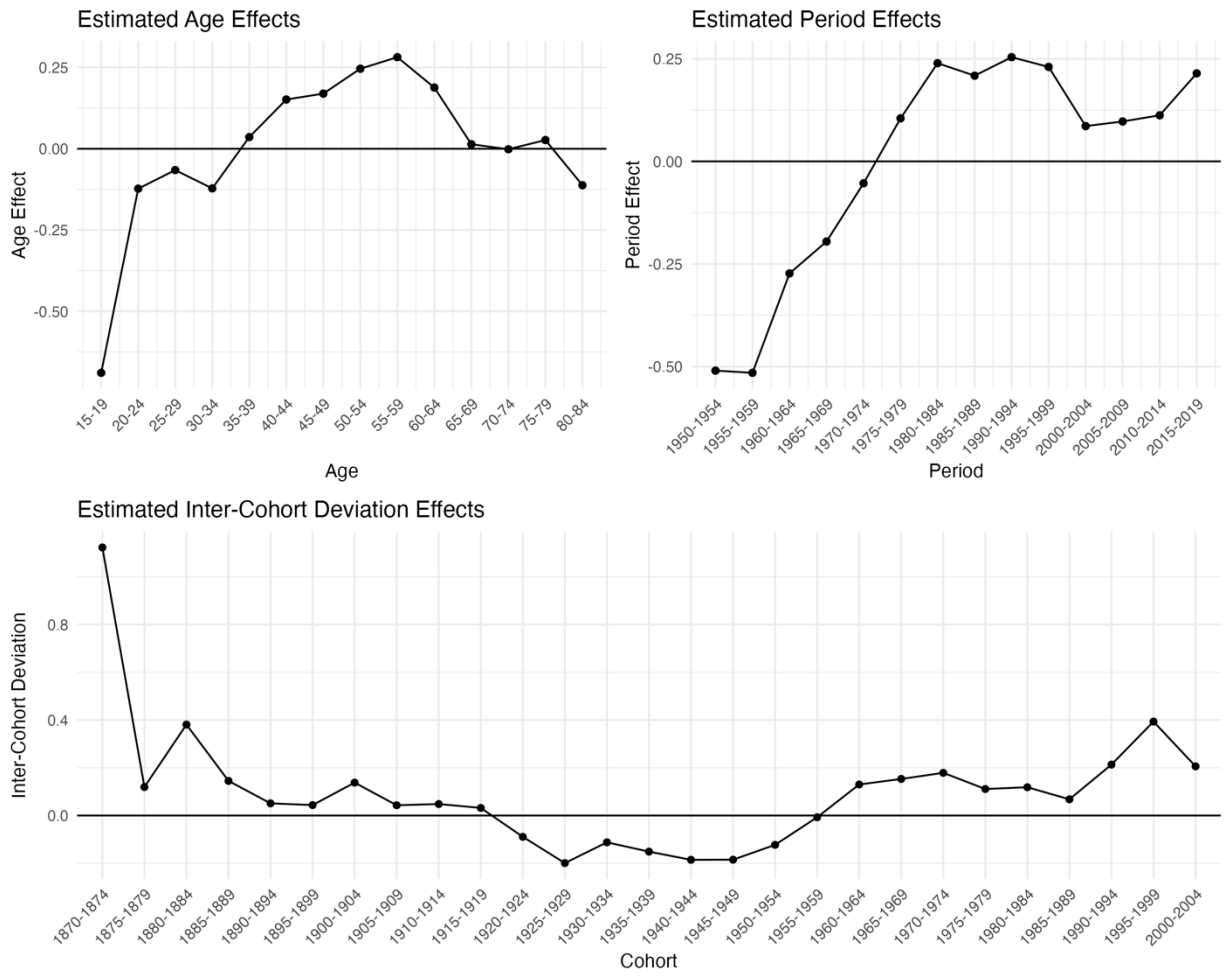

Figure 62: Estimated age, period, and inter-cohort deviation effects for males in Atlantic Canada.
Notes: The horizontal y-intercept of 0 indicates no deviation from the global mean for Age and Period effects. For Cohort effects, it represents no deviation from the suicide rates predicted by age and period main effects only.

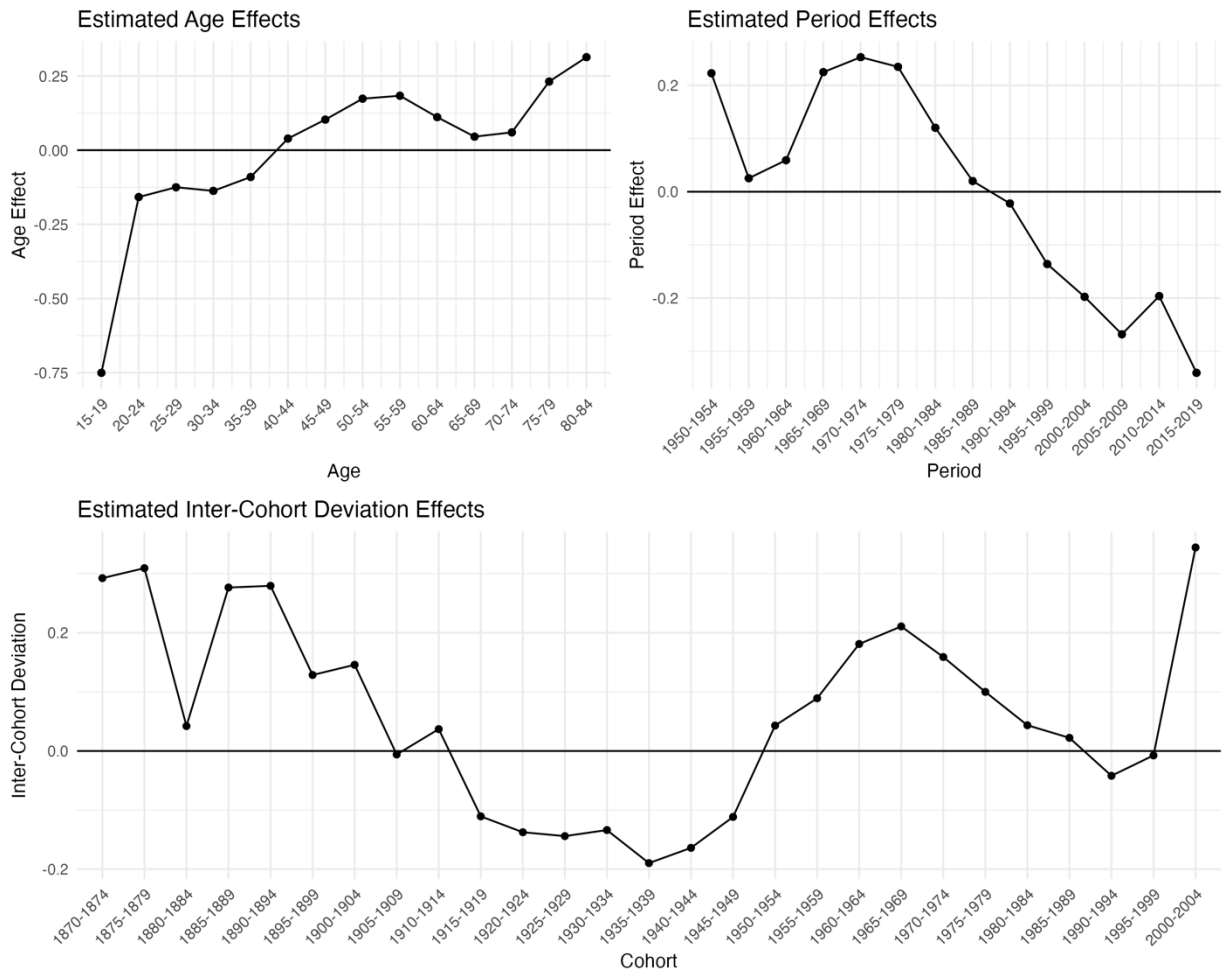

Figure 63: Estimated age, period, and inter-cohort deviation effects for males in British Columbia.
Notes: The horizontal y-intercept of 0 indicates no deviation from the global mean for Age and Period effects. For Cohort effects, it represents no deviation from the suicide rates predicted by age and period main effects only.

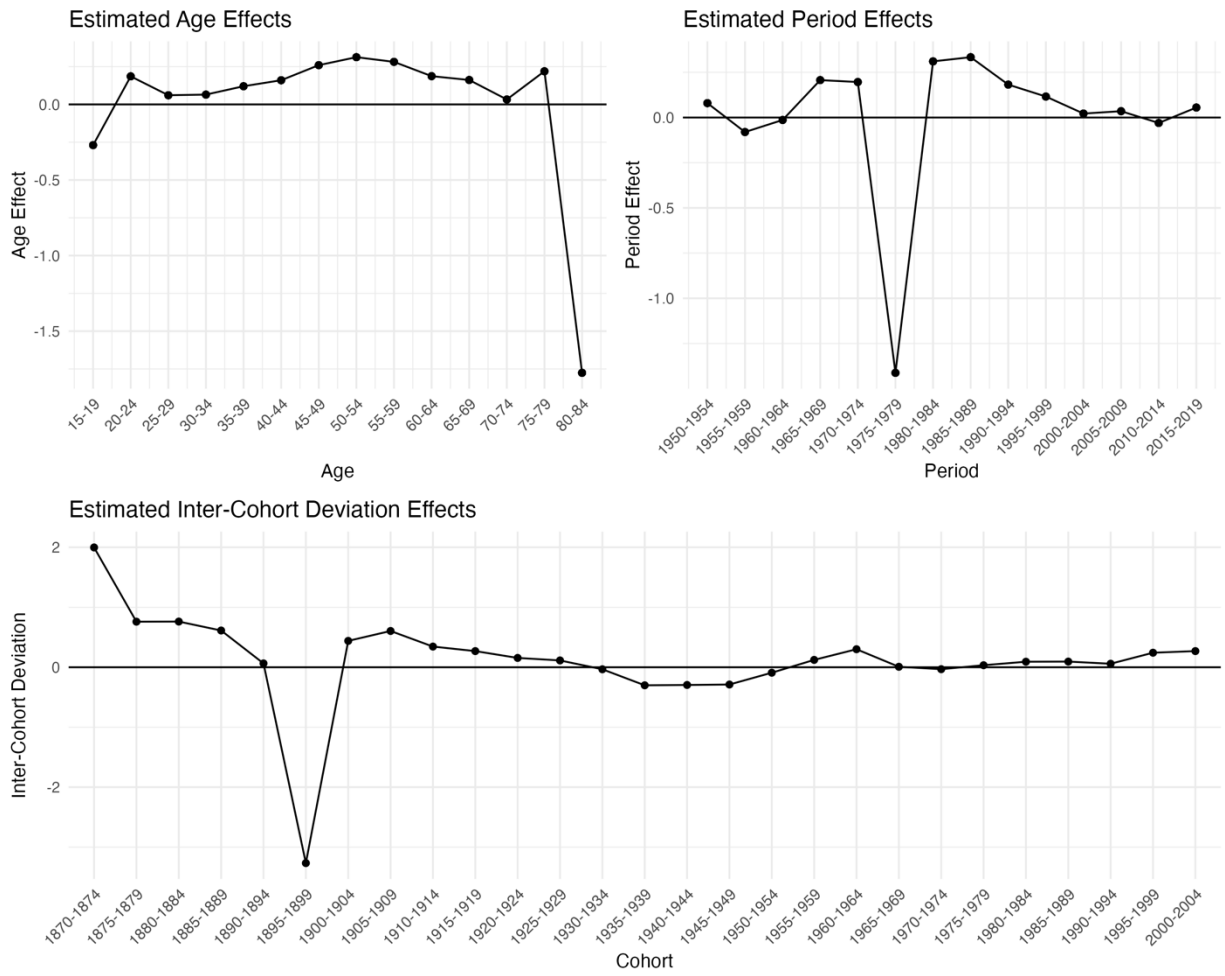

Figure 64: Estimated age, period, and inter-cohort deviation effects for males in Manitoba.
Notes: The horizontal y-intercept of 0 indicates no deviation from the global mean for Age and Period effects. For Cohort effects, it represents no deviation from the suicide rates predicted by age and period main effects only.

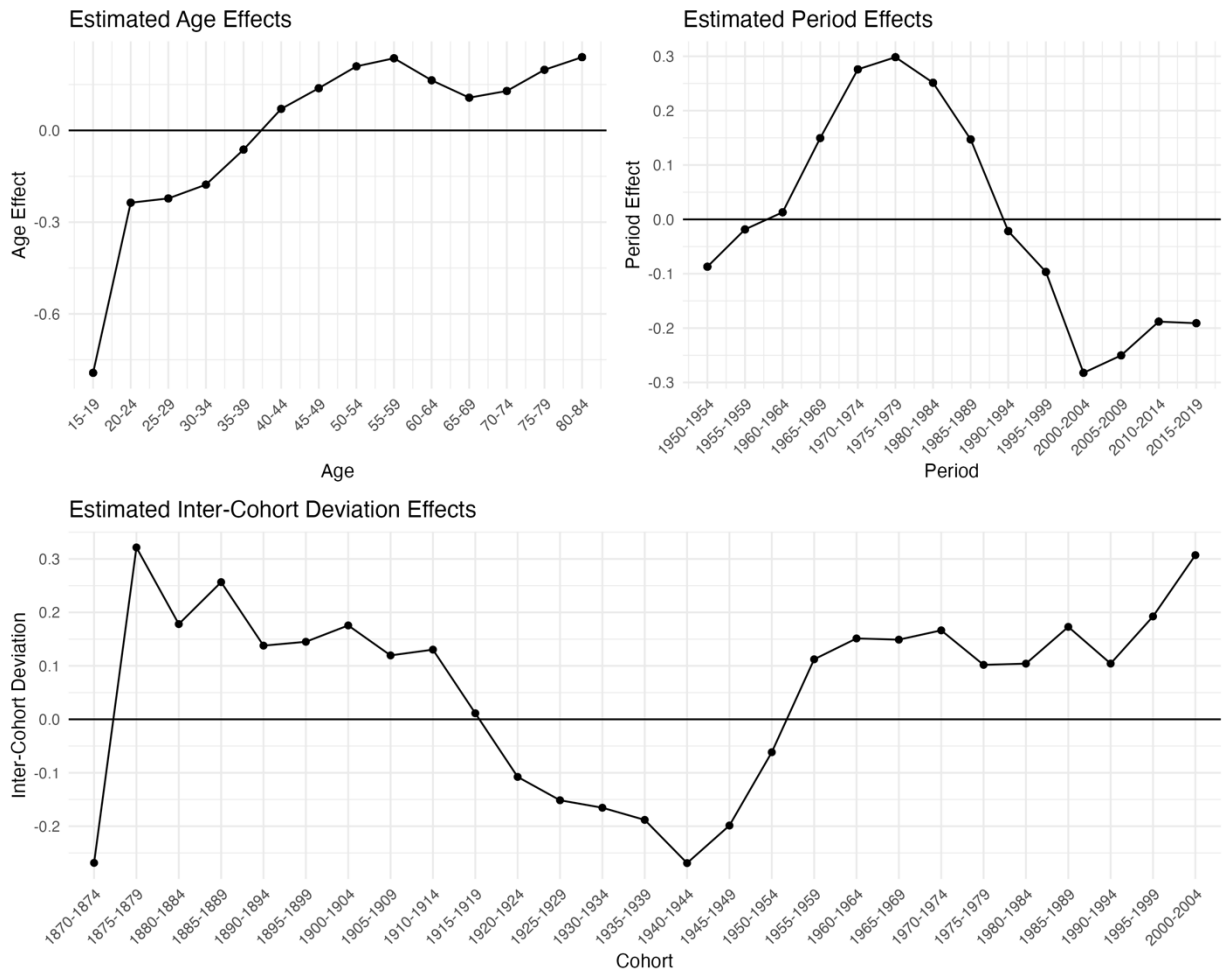

Figure 65: Estimated age, period, and inter-cohort deviation effects for males in Ontario.
Notes: The horizontal y-intercept of 0 indicates no deviation from the global mean for Age and Period effects. For Cohort effects, it represents no deviation from the suicide rates predicted by age and period main effects only.

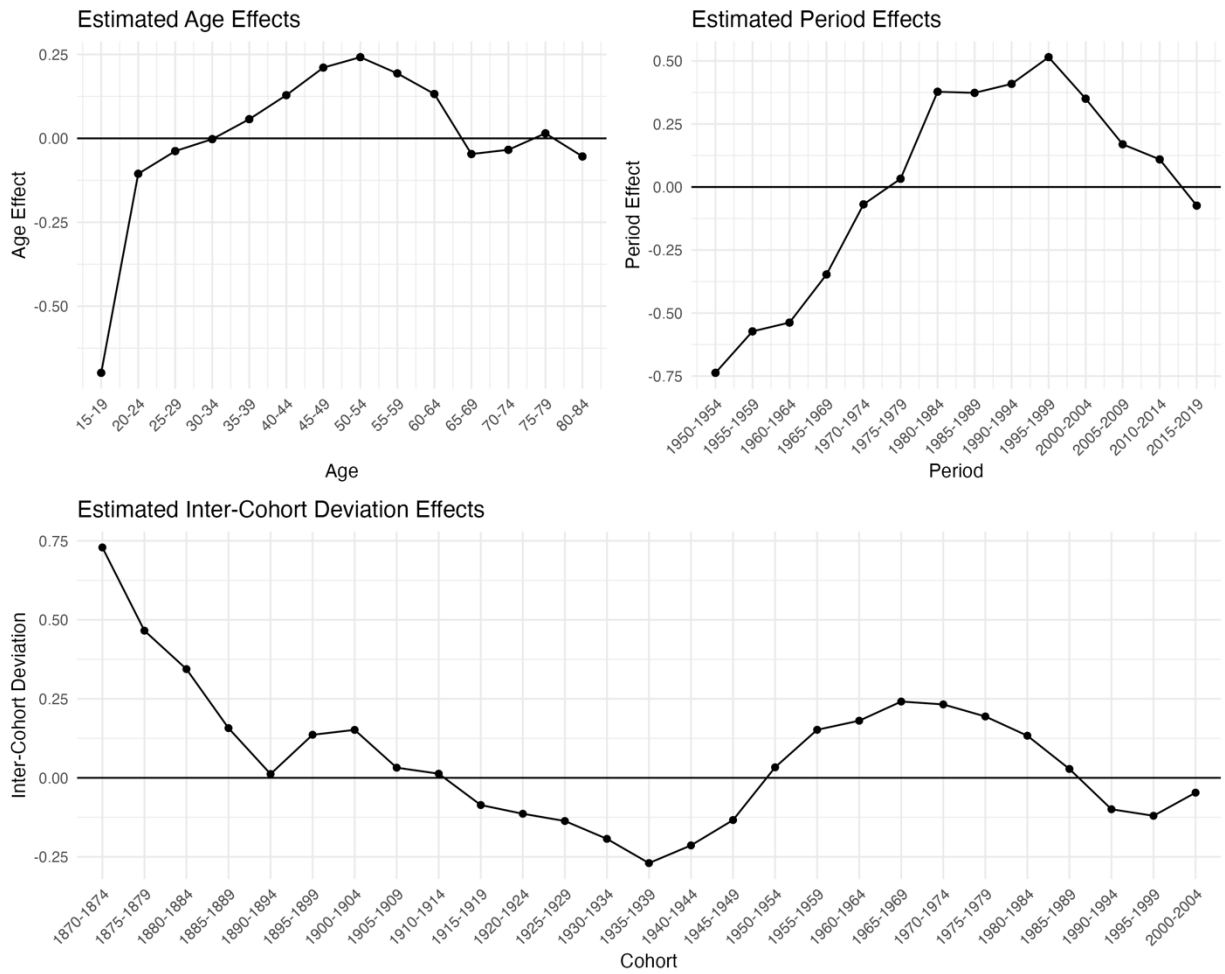

Figure 66: Estimated age, period, and inter-cohort deviation effects for males in Québec.
Notes: The horizontal y-intercept of 0 indicates no deviation from the global mean for Age and Period effects. For Cohort effects, it represents no deviation from the suicide rates predicted by age and period main effects only.

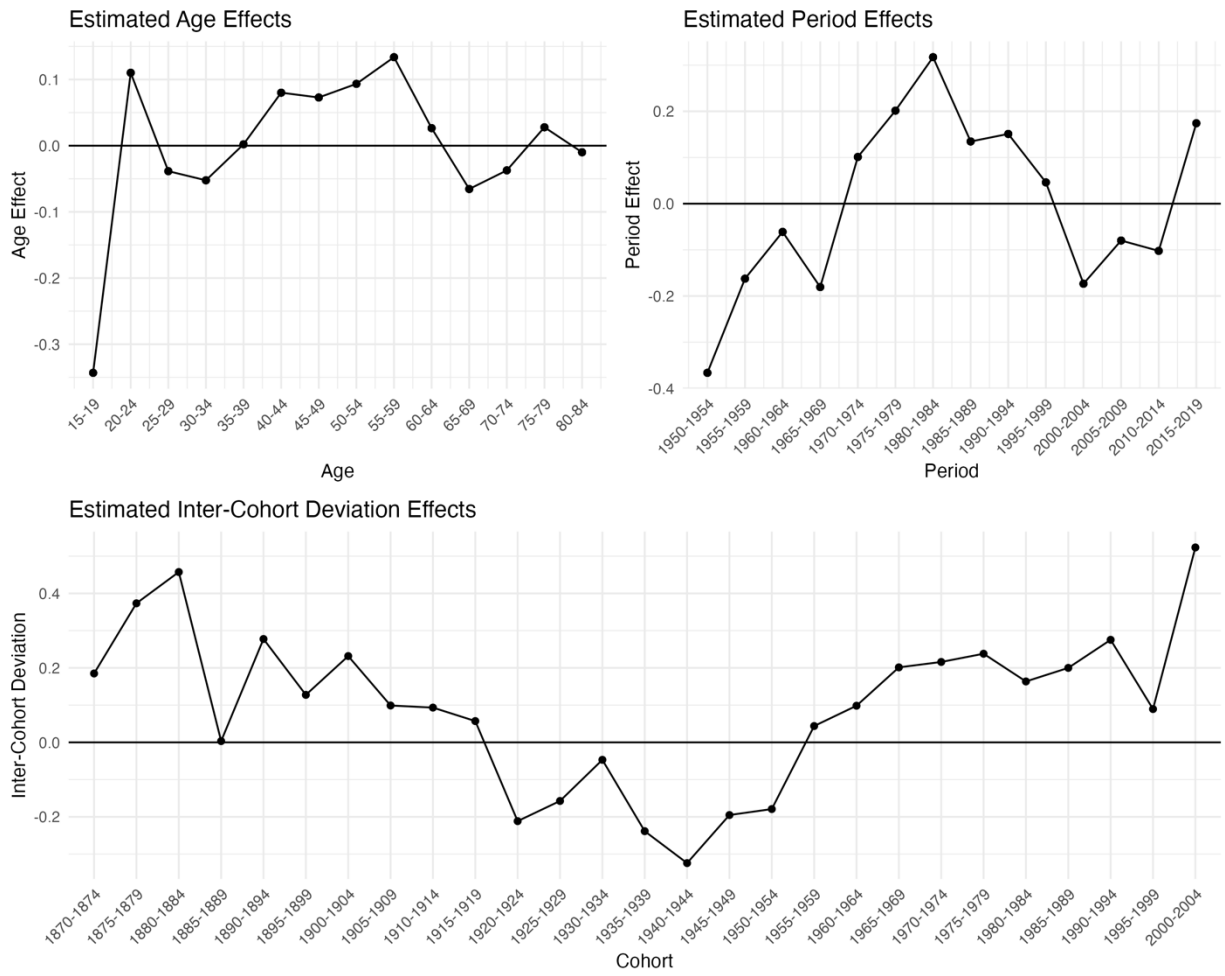

Figure 67: Estimated age, period, and inter-cohort deviation effects for males in Saskatchewan.
Notes: The horizontal y-intercept of 0 indicates no deviation from the global mean for Age and Period effects. For Cohort effects, it represents no deviation from the suicide rates predicted by age and period main effects only.

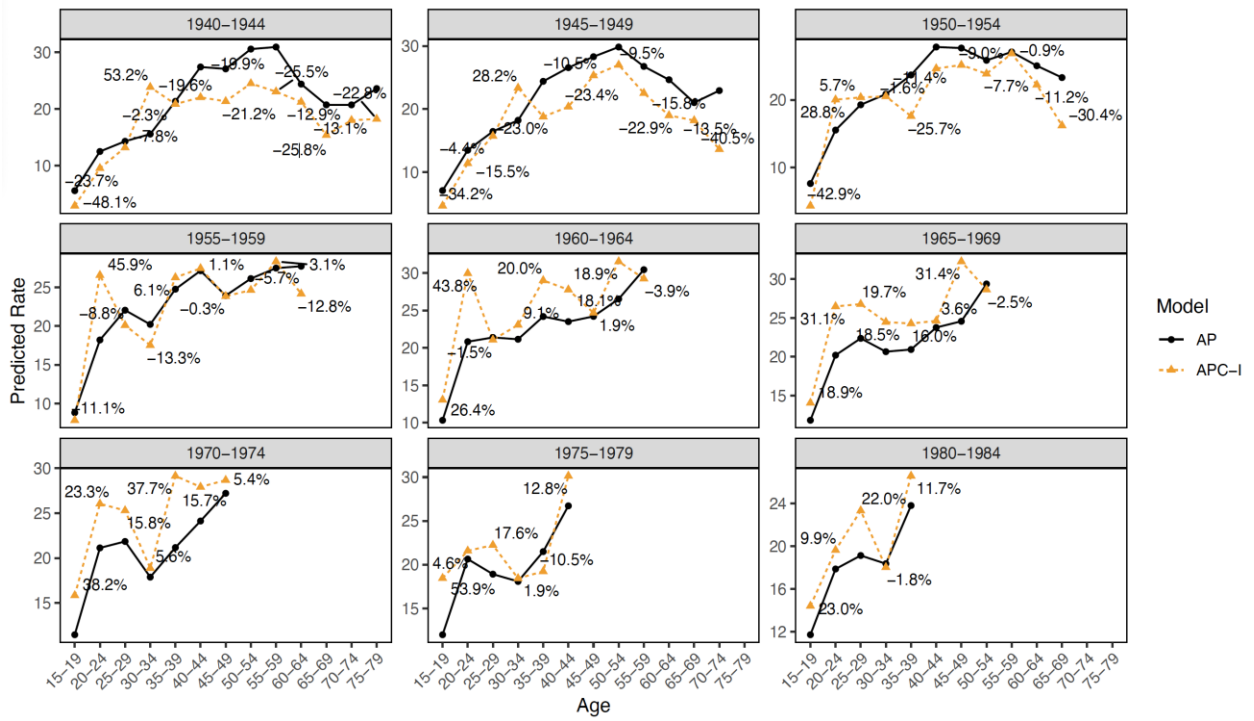

Figure 68: Predicted suicide rates by model and cohort for Atlantic Canada males.

Notes: AP refers to the combination of age and period main effects; APC-I refers to the complete model: age, period, and age-by-period interaction terms. The percentage difference between the models represents the cohort effect for each age group.

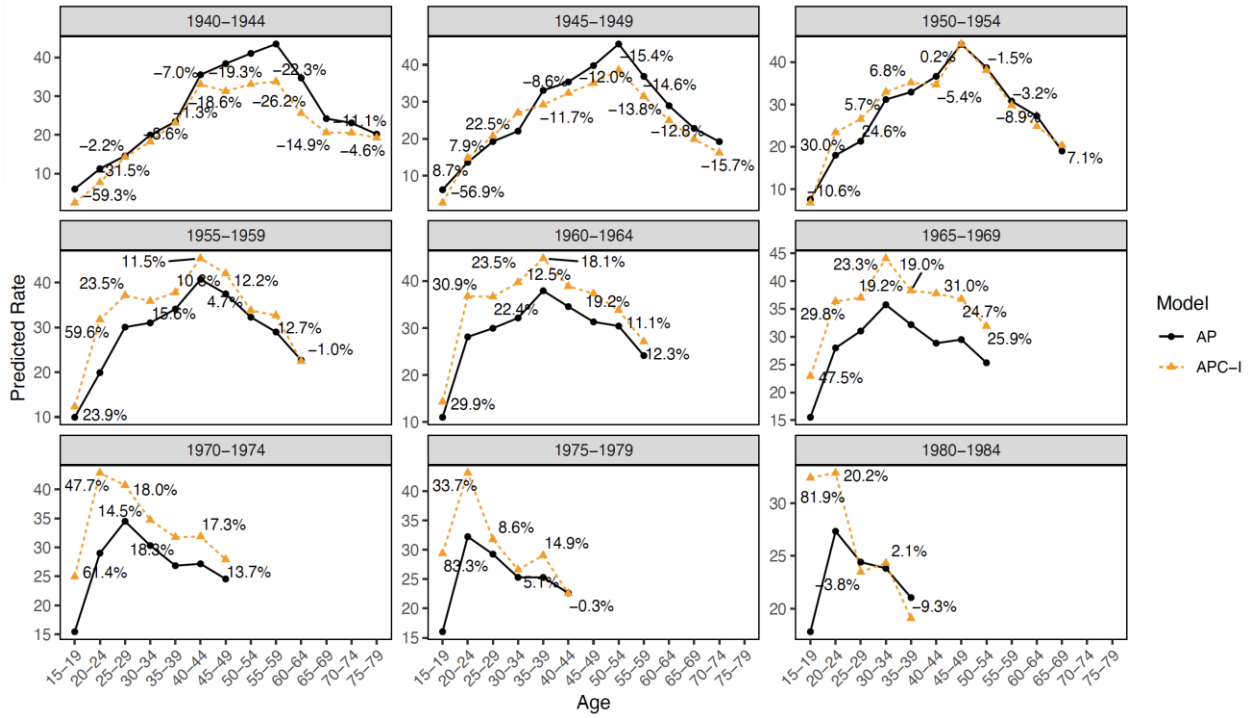

Figure 69: Predicted suicide rates by model and cohort for Québec males.

Notes: AP refers to the combination of age and period main effects; APC-I refers to the complete model: age, period, and age-by-period interaction terms. The percentage difference between the models represents the cohort effect for each age group.

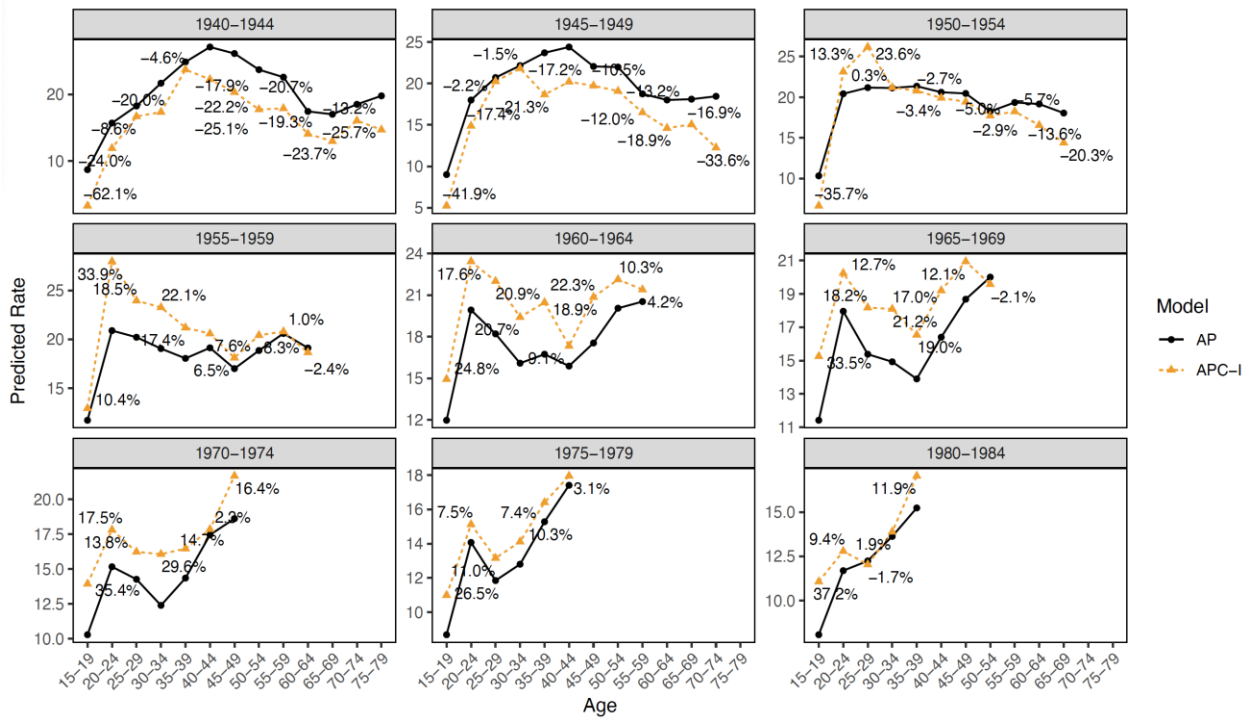

Figure 70: Predicted suicide rates by model and cohort for Ontario males.

Notes: AP refers to the combination of age and period main effects; APC-I refers to the complete model: age, period, and age-by-period interaction terms. The percentage difference between the models represents the cohort effect for each age group.

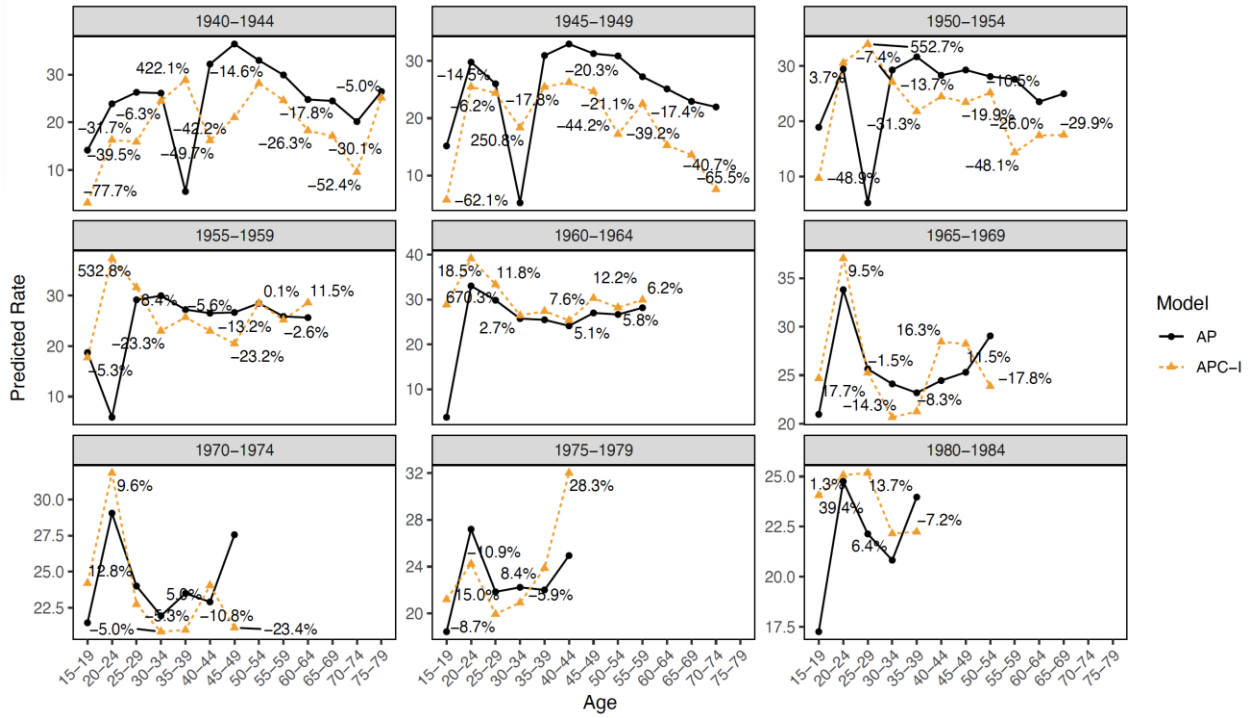

Figure 71: Predicted suicide rates by model and cohort for Manitoba males.

Notes: AP refers to the combination of age and period main effects; APC-I refers to the complete model: age, period, and age-by-period interaction terms. The percentage difference between the models represents the cohort effect for each age group.

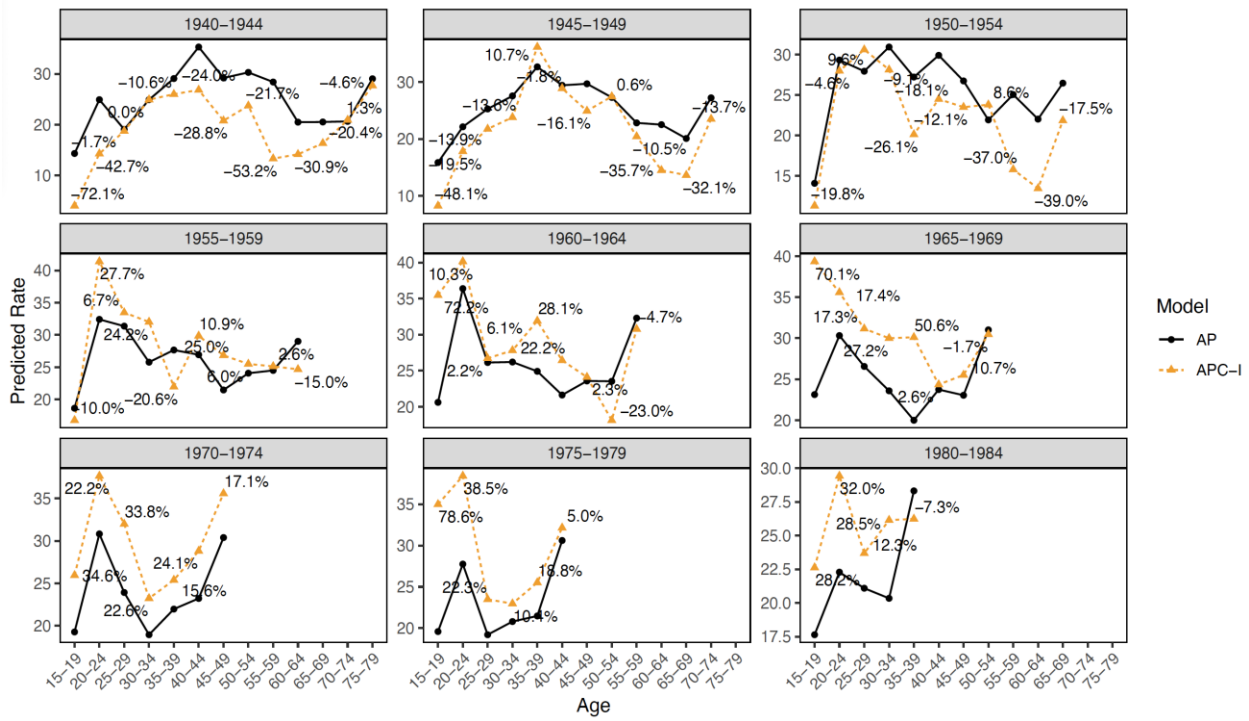

Figure 72: Predicted suicide rates by model and cohort for Saskatchewan males.

Notes: AP refers to the combination of age and period main effects; APC-I refers to the complete model: age, period, and age-by-period interaction terms. The percentage difference between the models represents the cohort effect for each age group.

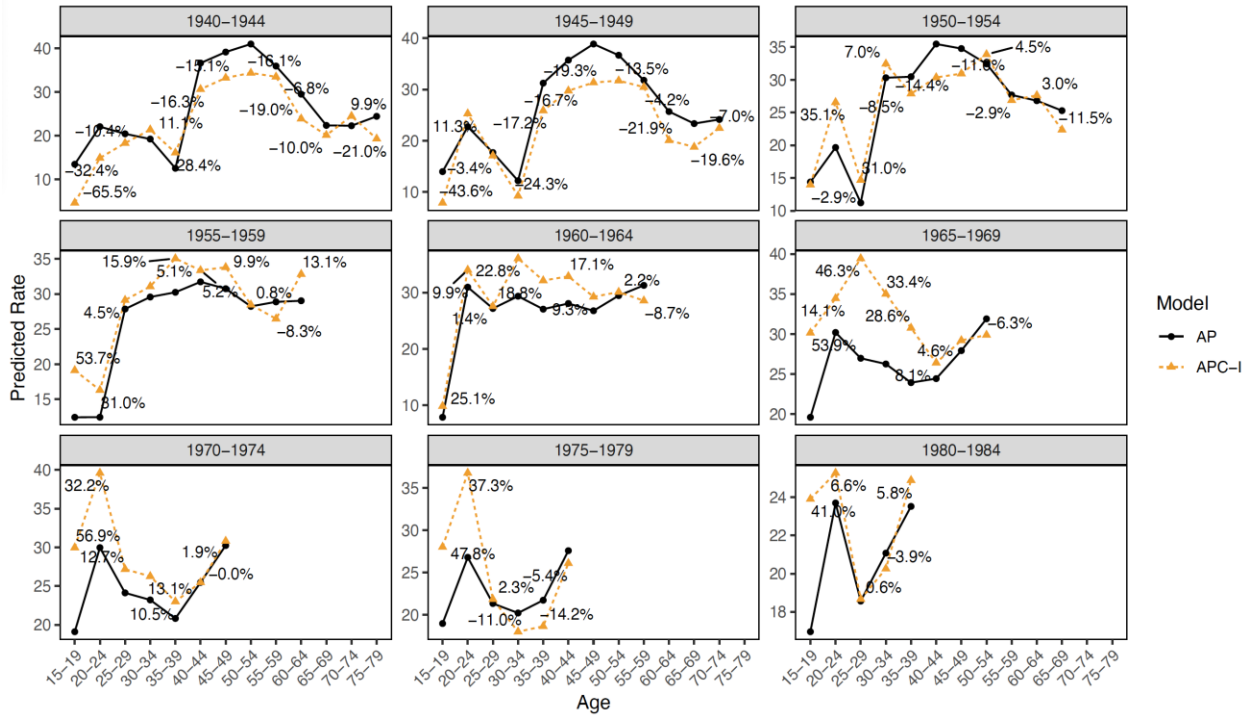

Figure 73: Predicted suicide rates by model and cohort for Alberta males.

Notes: AP refers to the combination of age and period main effects; APC-I refers to the complete model: age, period, and age-by-period interaction terms. The percentage difference between the models represents the cohort effect for each age group.

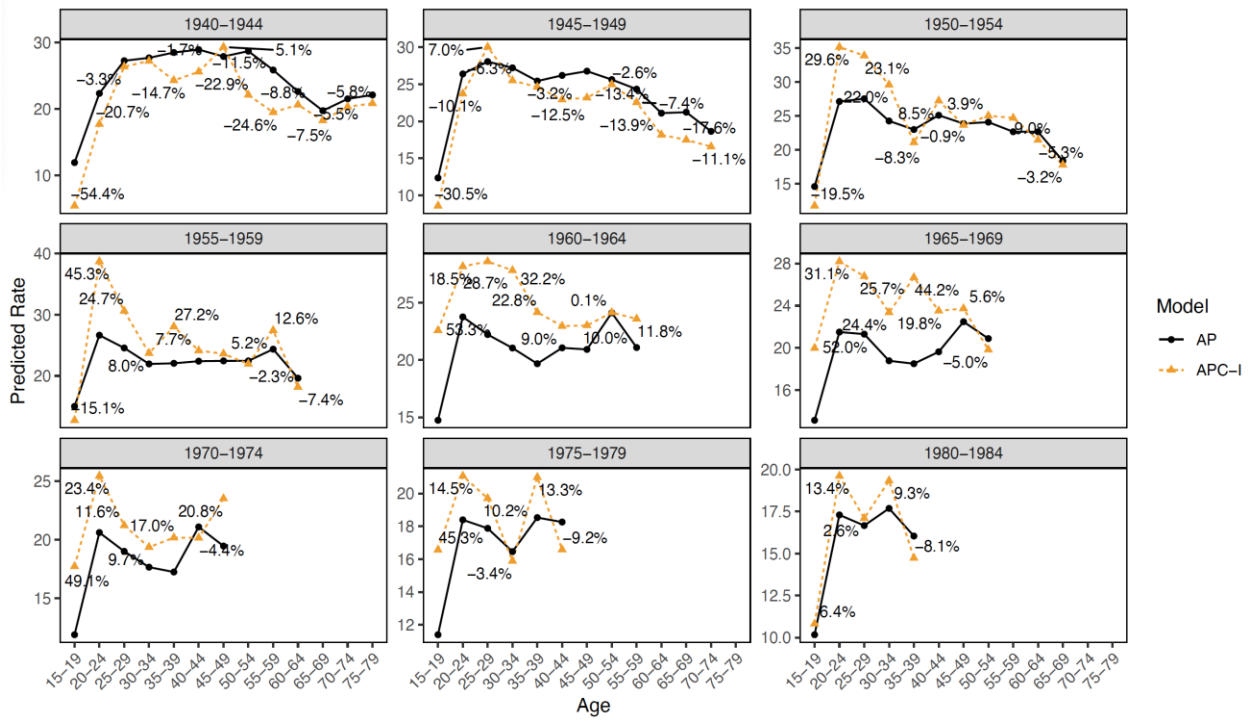

Figure 74: Predicted suicide rates by model and cohort for British Columbia males.

Notes: AP refers to the combination of age and period main effects; APC-I refers to the complete model: age, period, and age-by-period interaction terms. The percentage difference between the models represents the cohort effect for each age group.

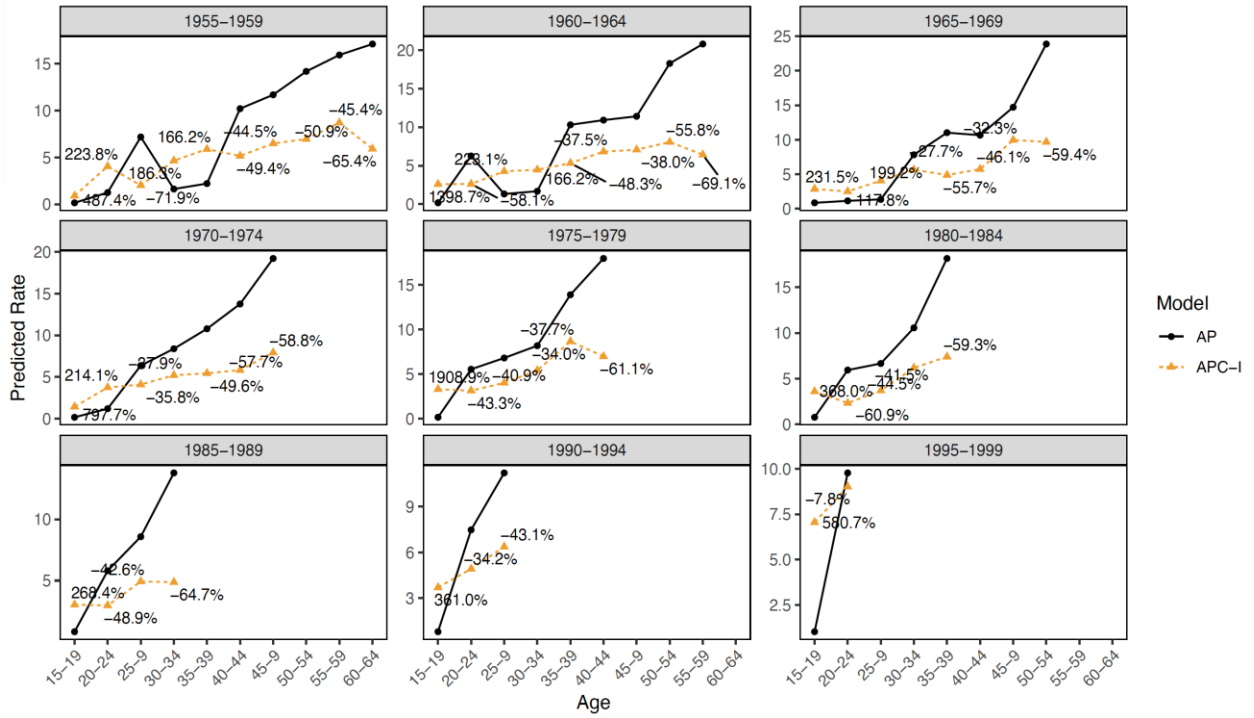

Figure 75: Predicted suicide rates by model and cohort for Atlantic Canada females.

Notes: AP refers to the combination of age and period main effects; APC-I refers to the complete model: age, period, and age-by-period interaction terms. The percentage difference between the models represents the cohort effect for each age group.

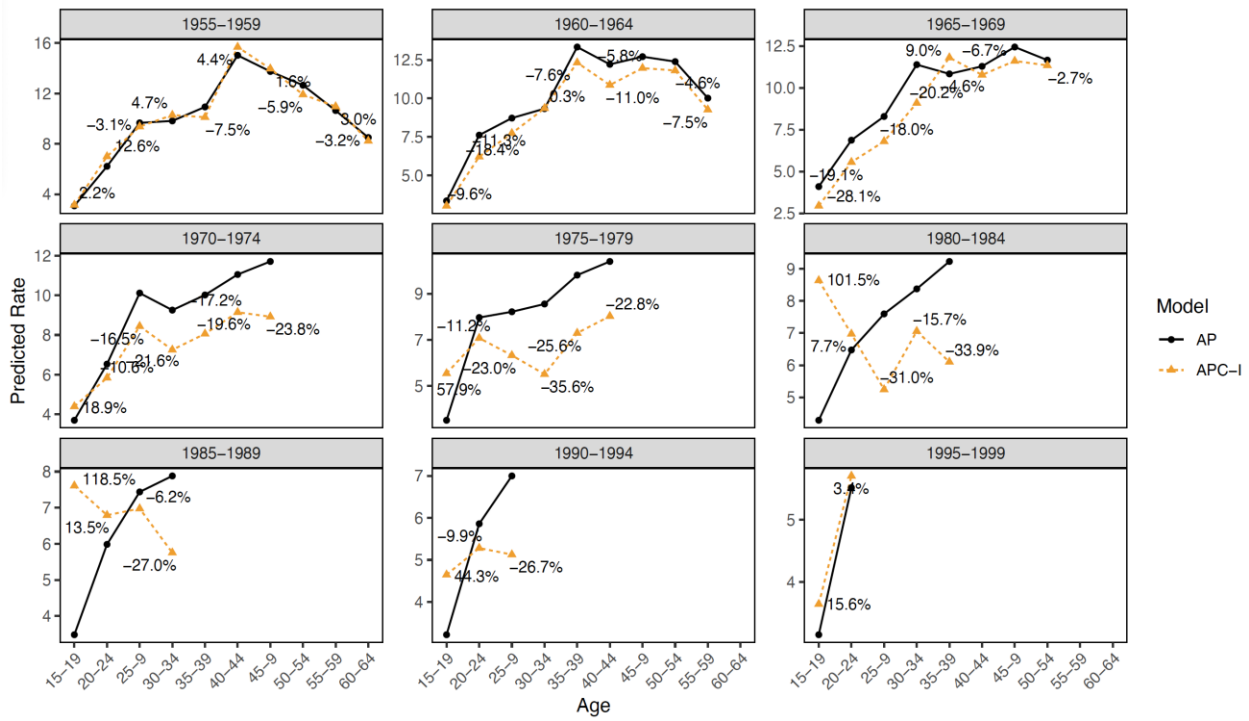

Figure 76: Predicted suicide rates by model and cohort for Québec females.

Notes: AP refers to the combination of age and period main effects; APC-I refers to the complete model: age, period, and age-by-period interaction terms. The percentage difference between the models represents the cohort effect for each age group.

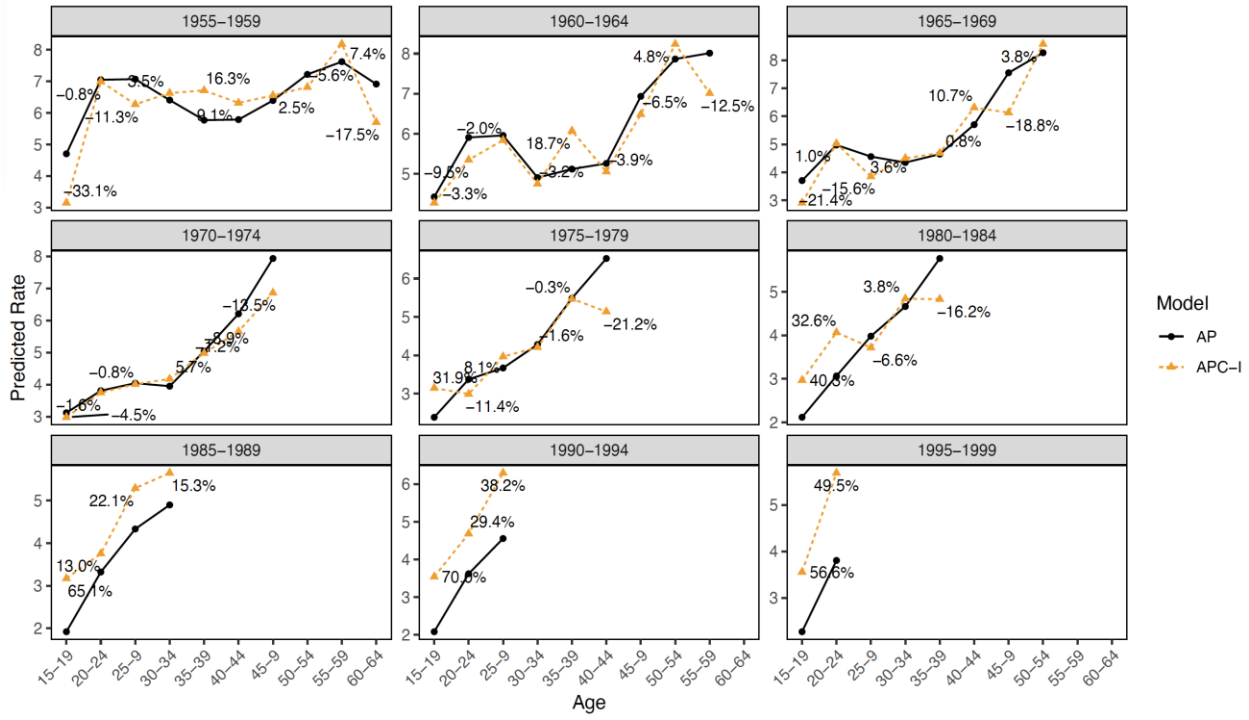

Figure 77: Predicted suicide rates by model and cohort for Ontario females.

Notes: AP refers to the combination of age and period main effects; APC-I refers to the complete model: age, period, and age-by-period interaction terms. The percentage difference between the models represents the cohort effect for each age group.

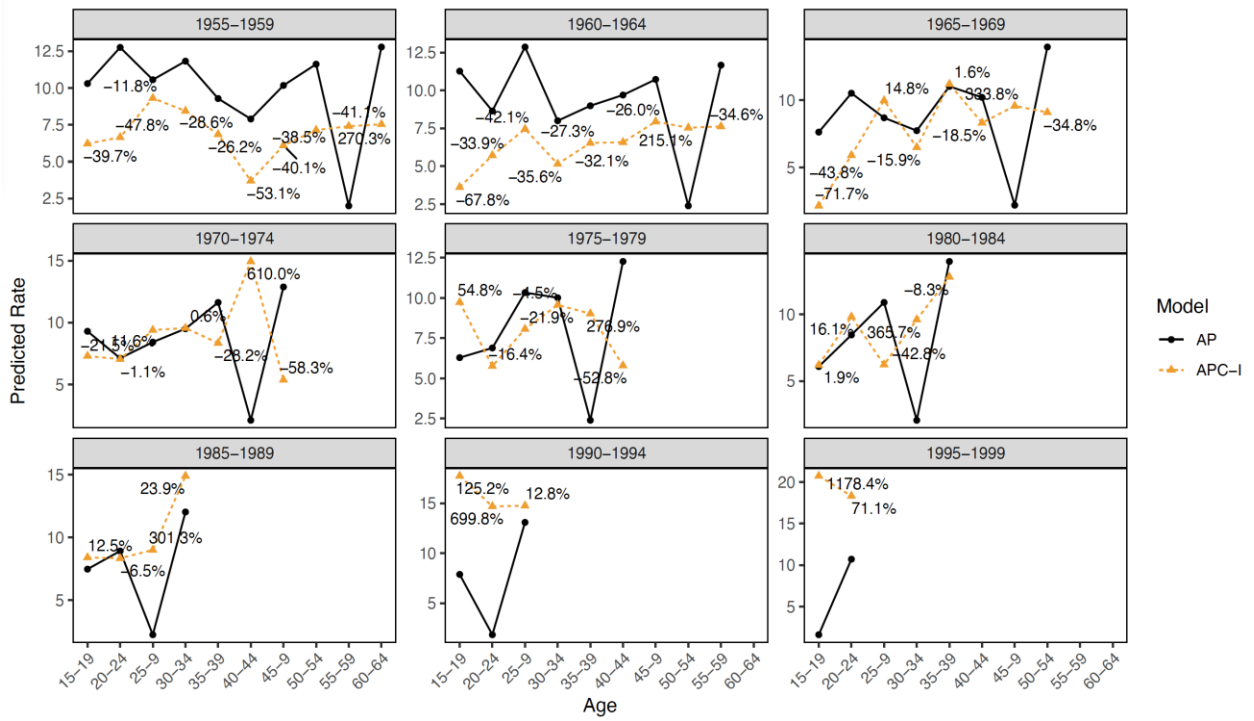

Figure 78: Predicted suicide rates by model and cohort for Manitoba females.

Notes: AP refers to the combination of age and period main effects; APC-I refers to the complete model: age, period, and age-by-period interaction terms. The percentage difference between the models represents the cohort effect for each age group.

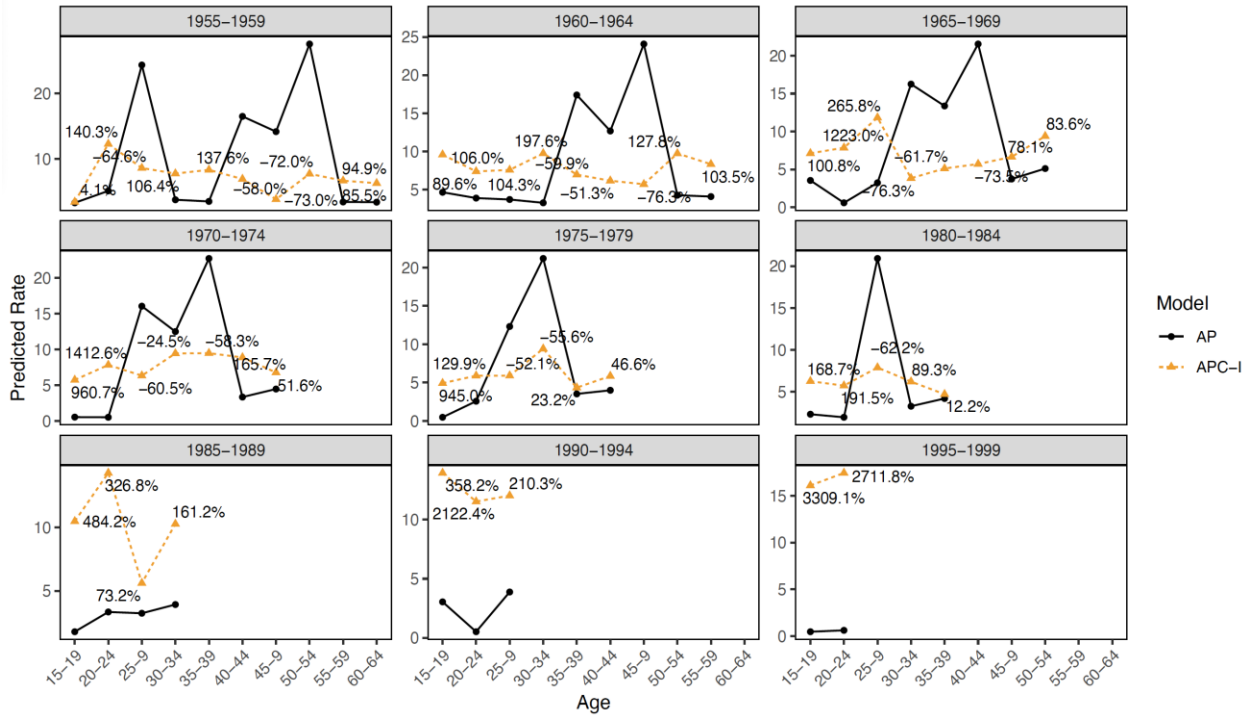

Figure 79: Predicted suicide rates by model and cohort for Saskatchewan females.

Notes: AP refers to the combination of age and period main effects; APC-I refers to the complete model: age, period, and age-by-period interaction terms. The percentage difference between the models represents the cohort effect for each age group.

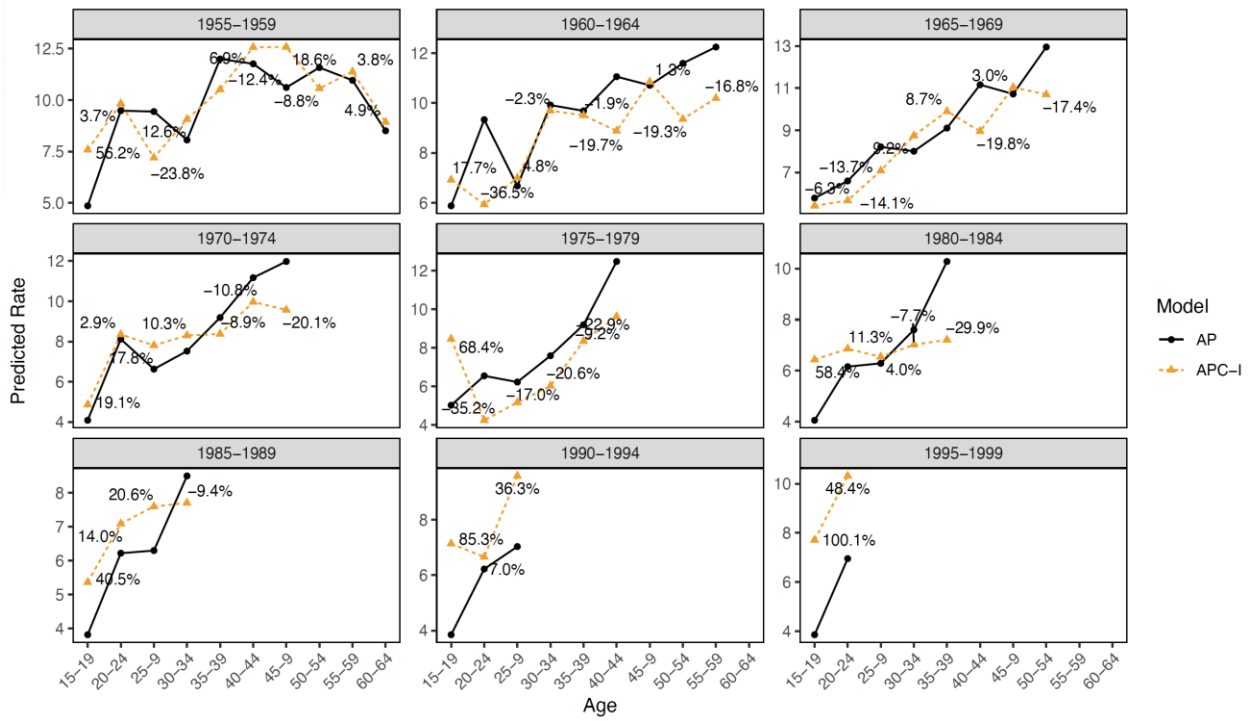

Figure 80: Predicted suicide rates by model and cohort for Alberta females.

Notes: AP refers to the combination of age and period main effects; APC-I refers to the complete model: age, period, and age-by-period interaction terms. The percentage difference between the models represents the cohort effect for each age group.

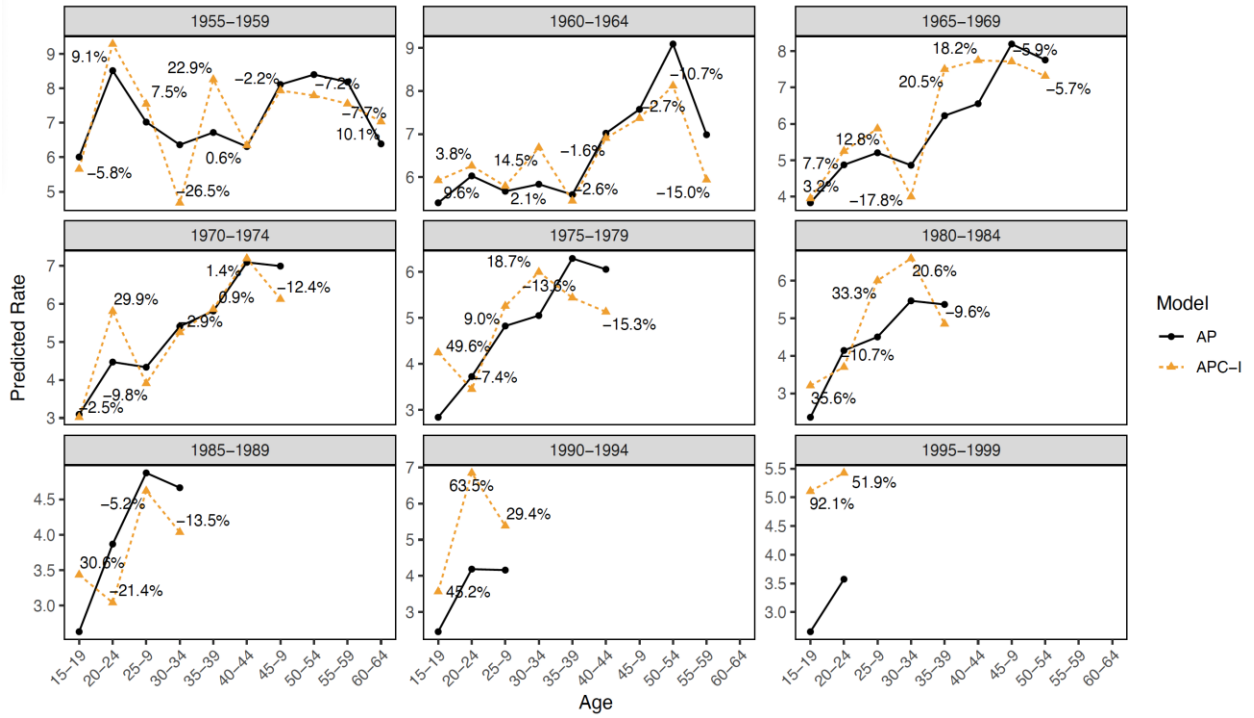

Figure 81: Predicted suicide rates by model and cohort for British Columbia females.

Notes: AP refers to the combination of age and period main effects; APC-I refers to the complete model: age, period, and age-by-period interaction terms. The percentage difference between the models represents the cohort effect for each age group.

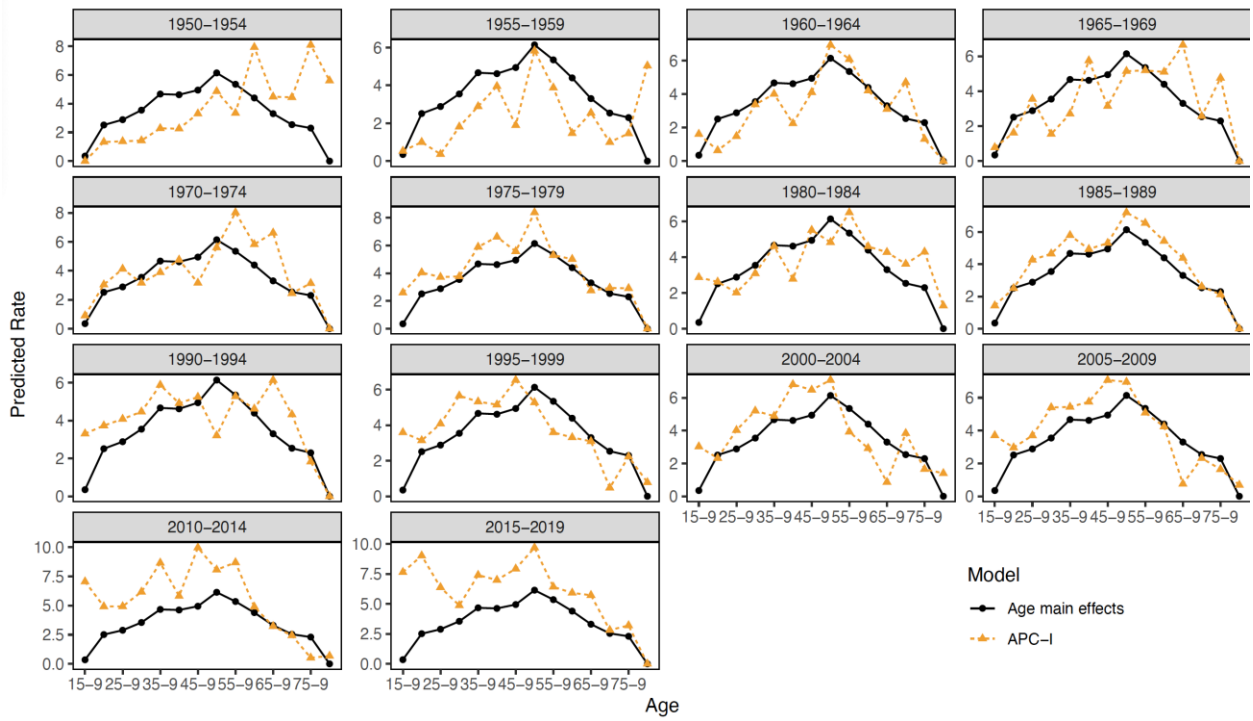

Figure 82: Predicted suicide rates for Atlantic Canada females, by model and period.

Notes: the age-only curve represents the predicted suicide rates with age main effects only. The APC-I curve represents the predicted rates with the full APC model (age, period, and cohort effects). Any deviation from the age-only curve indicates possible period and/or cohort effects across the various time periods.

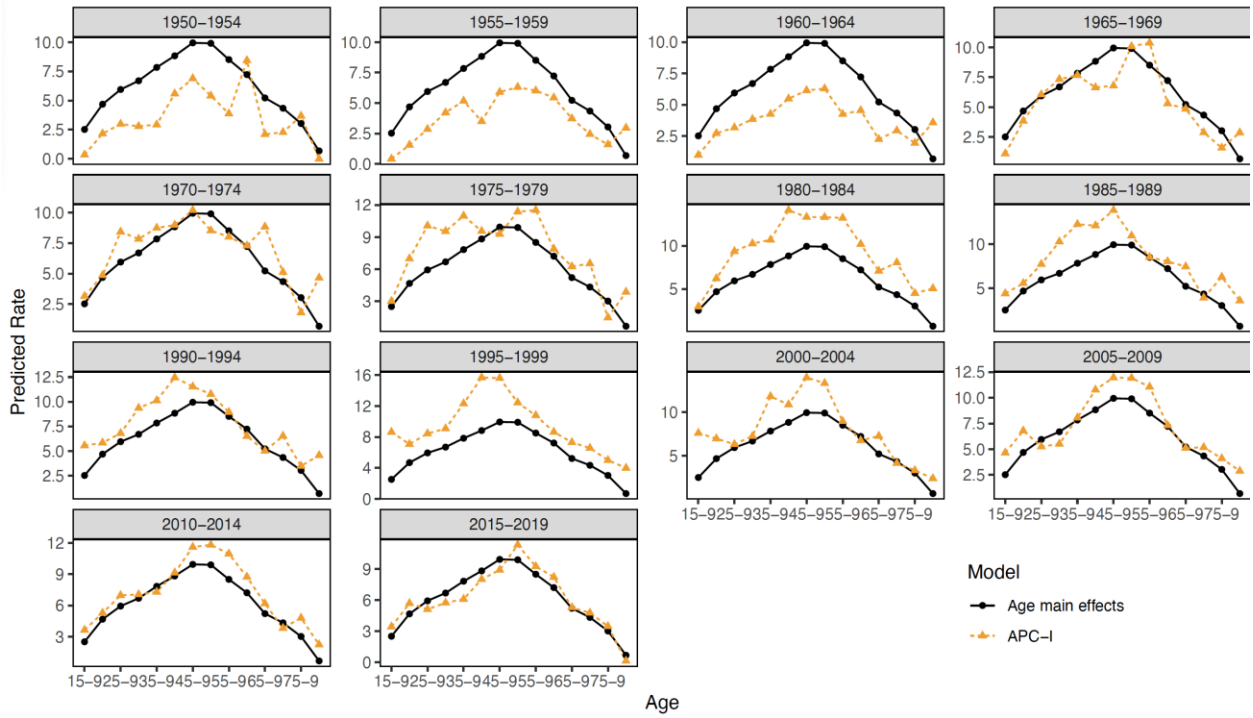

Figure 83: Predicted suicide rates for Québec females, by model and period.

Notes: the age-only curve represents the predicted suicide rates with age main effects only. The APC-I curve represents the predicted rates with the full APC model (age, period, and cohort effects). Any deviation from the age-only curve indicates possible period and/or cohort effects across the various time periods.

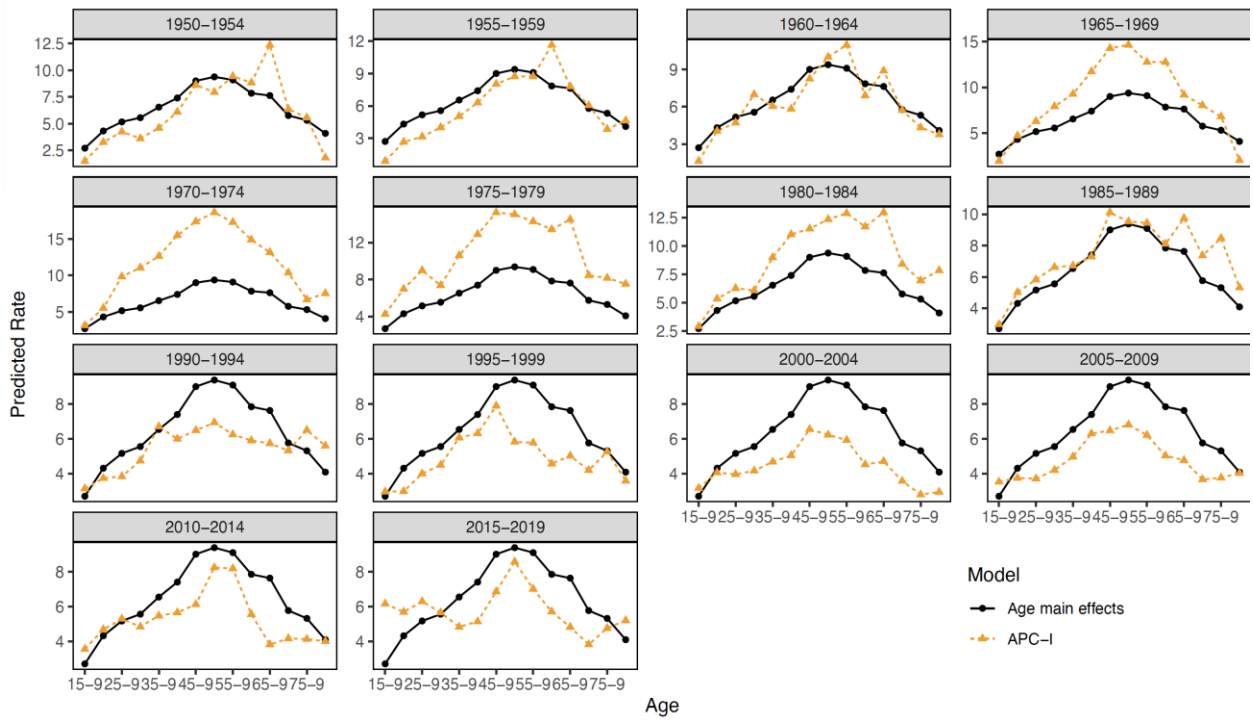

Figure 84: Predicted suicide rates for Ontario females, by model and period.

Notes: the age-only curve represents the predicted suicide rates with age main effects only. The APC-I curve represents the predicted rates with the full APC model (age, period, and cohort effects). Any deviation from the age-only curve indicates possible period and/or cohort effects across the various time periods.

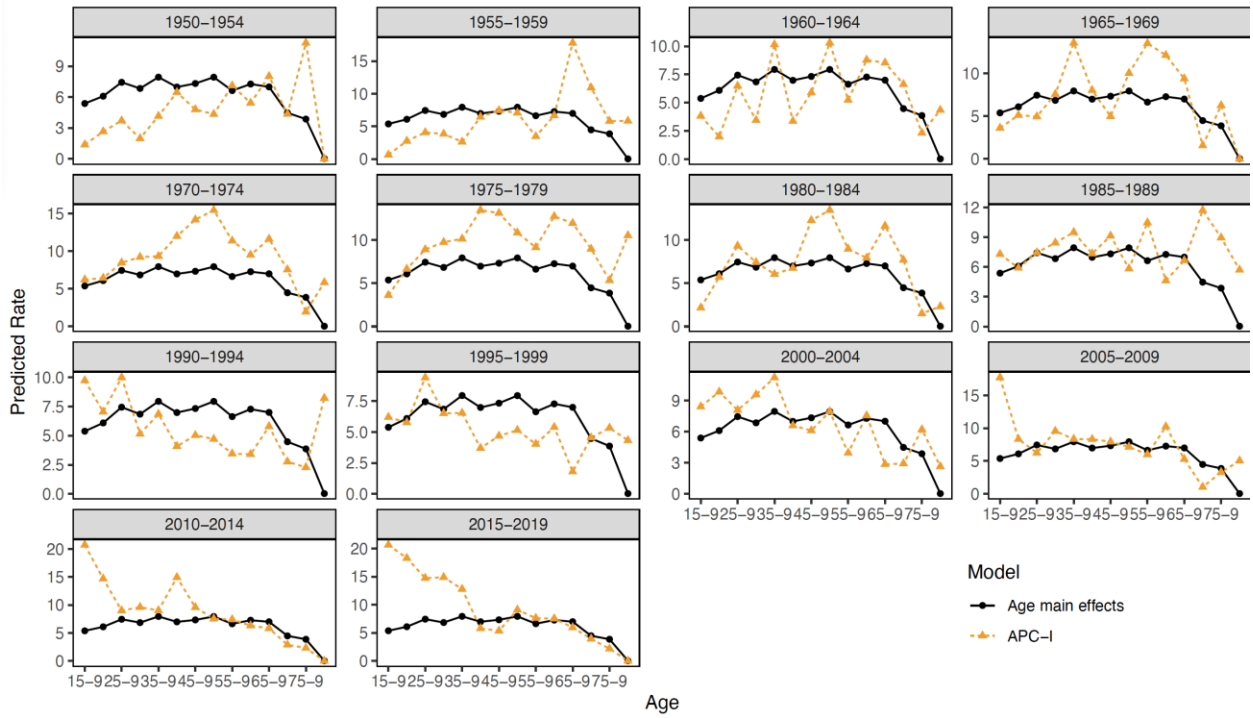

Figure 85: Predicted suicide rates for Manitoba females, by model and period.

Notes: the age-only curve represents the predicted suicide rates with age main effects only. The APC-I curve represents the predicted rates with the full APC model (age, period, and cohort effects). Any deviation from the age-only curve indicates possible period and/or cohort effects across the various time periods.

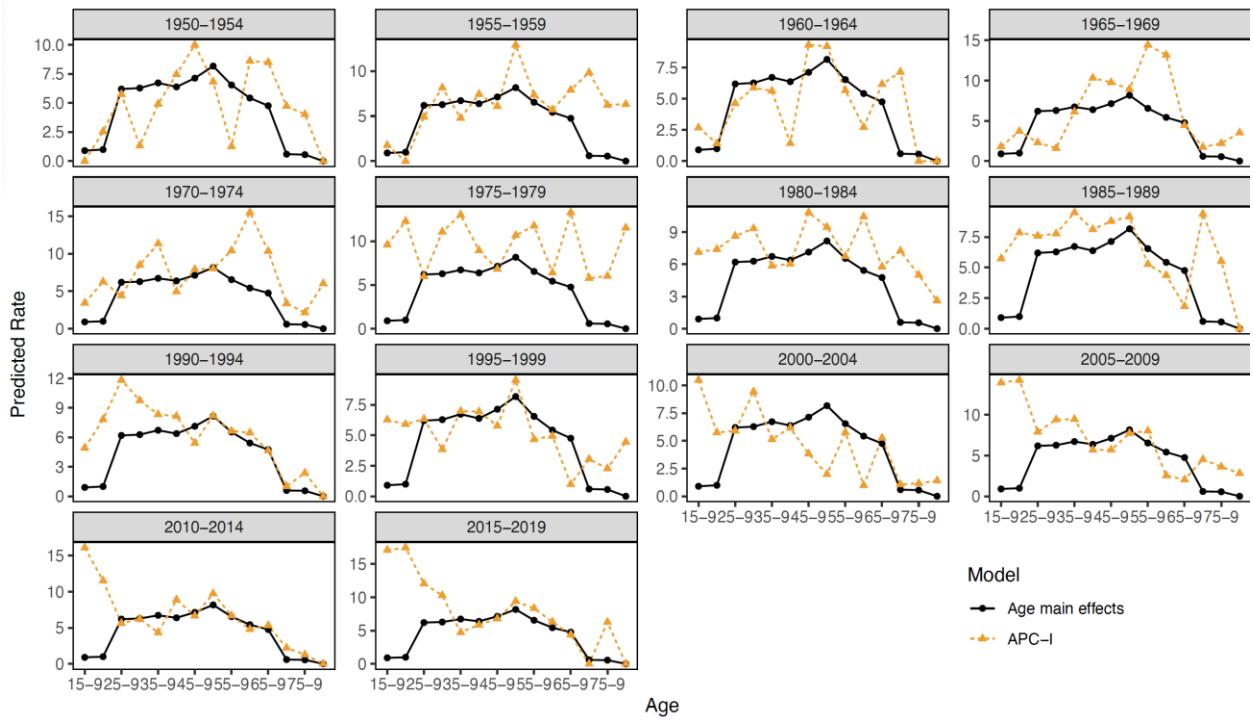

Figure 86: Predicted suicide rates for Saskatchewan females, by model and period.

Notes: the age-only curve represents the predicted suicide rates with age main effects only. The APC-I curve represents the predicted rates with the full APC model (age, period, and cohort effects). Any deviation from the age-only curve indicates possible period and/or cohort effects across the various time periods.

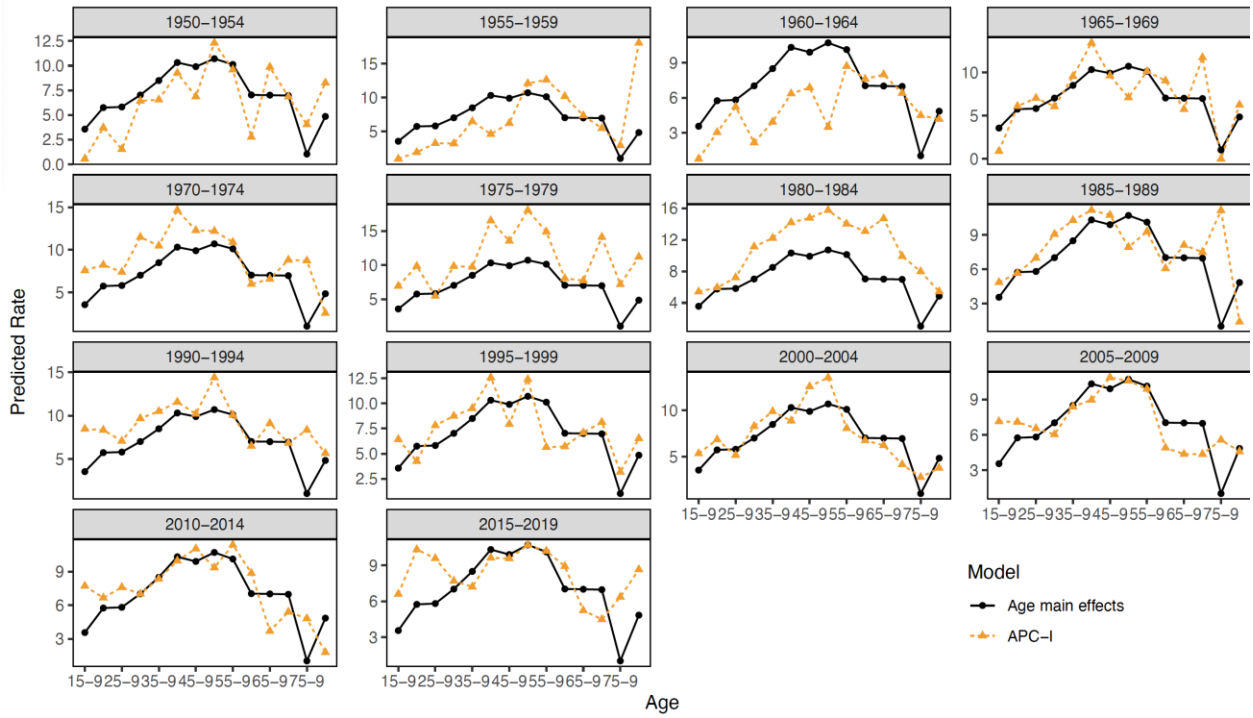

Figure 87: Predicted suicide rates for Alberta females, by model and period.

Notes: the age-only curve represents the predicted suicide rates with age main effects only. The APC-I curve represents the predicted rates with the full APC model (age, period, and cohort effects). Any deviation from the age-only curve indicates possible period and/or cohort effects across the various time periods.

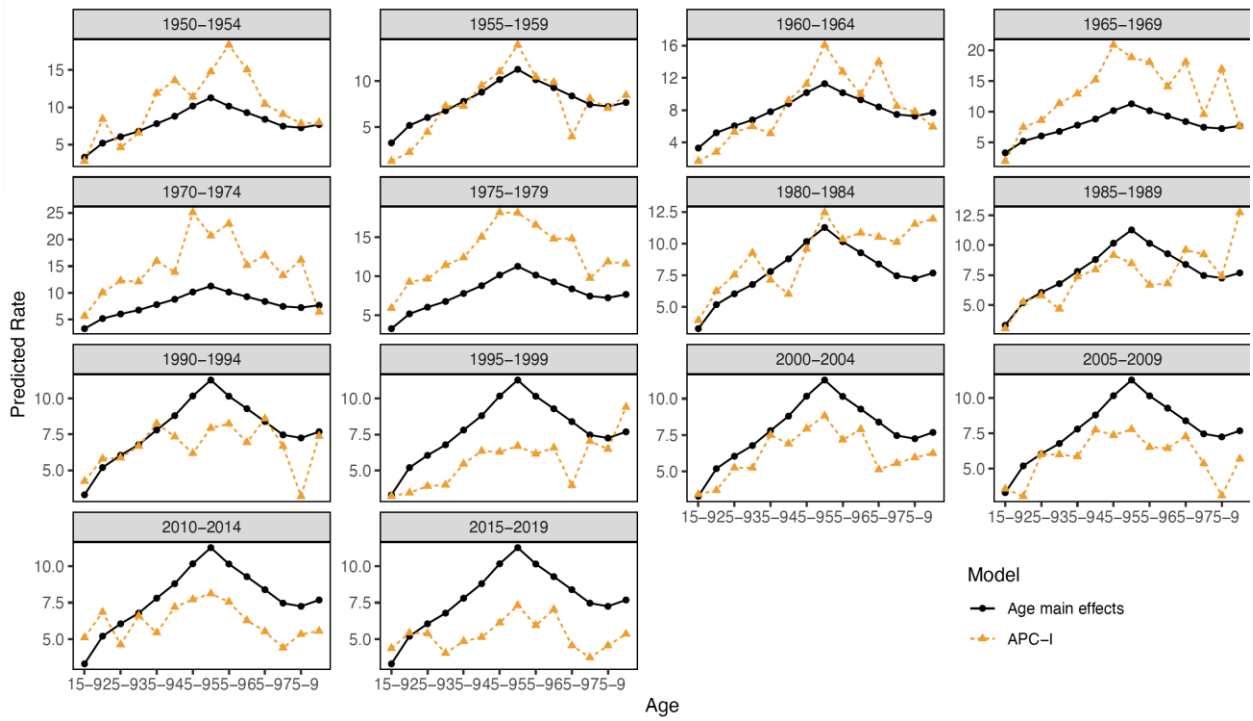

Figure 88: Predicted suicide rates for British Columbia females, by model and period.

Notes: the age-only curve represents the predicted suicide rates with age main effects only. The APC-I curve represents the predicted rates with the full APC model (age, period, and cohort effects). Any deviation from the age-only curve indicates possible period and/or cohort effects across the various time periods.

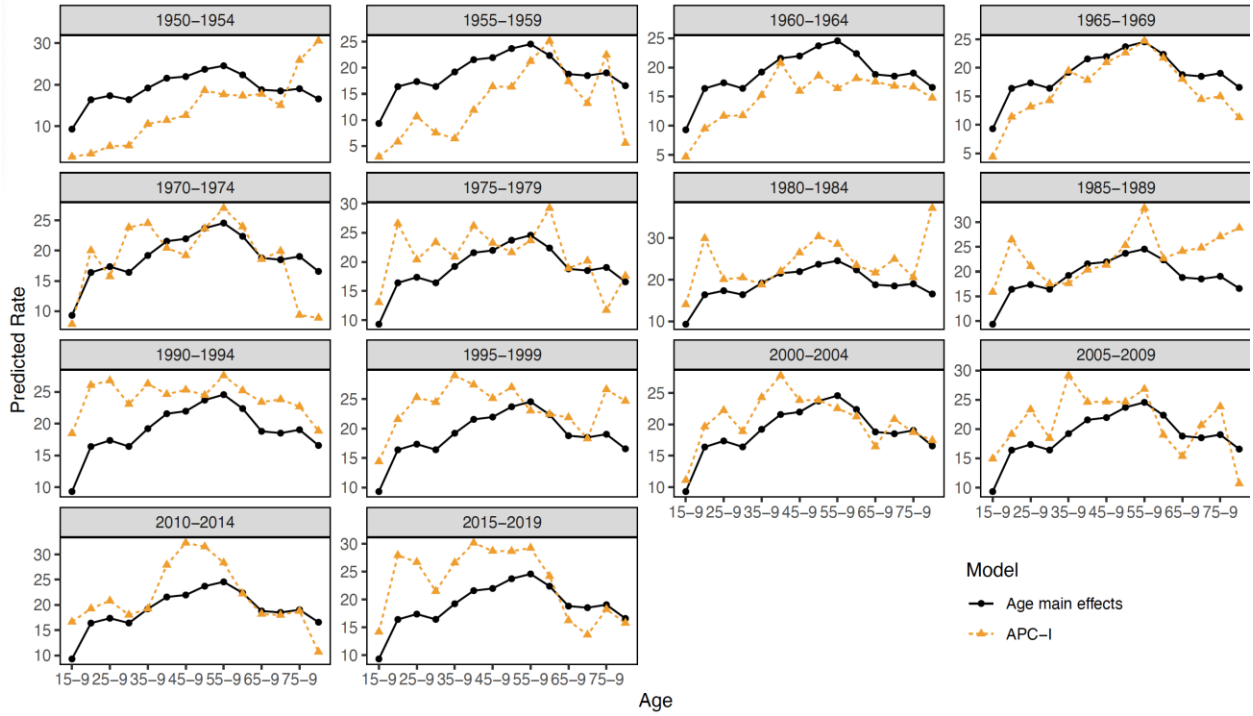

Figure 89: Predicted suicide rates for Atlantic Canada males, by model and period.

Notes: the age-only curve represents the predicted suicide rates with age main effects only. The APC-I curve represents the predicted rates with the full APC model (age, period, and cohort effects). Any deviation from the age-only curve indicates possible period and/or cohort effects across the various time periods.

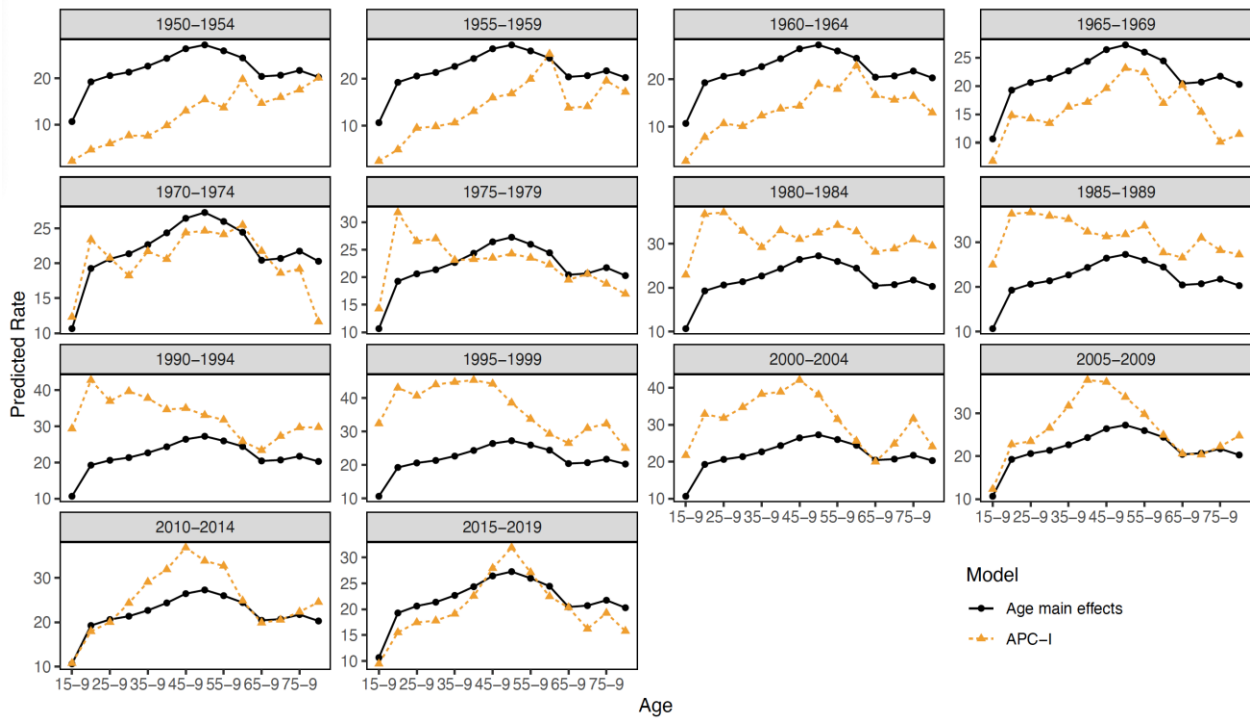

Figure 90: Predicted suicide rates for Québec males, by model and period.

Notes: the age-only curve represents the predicted suicide rates with age main effects only. The APC-I curve represents the predicted rates with the full APC model (age, period, and cohort effects). Any deviation from the age-only curve indicates possible period and/or cohort effects across the various time periods.

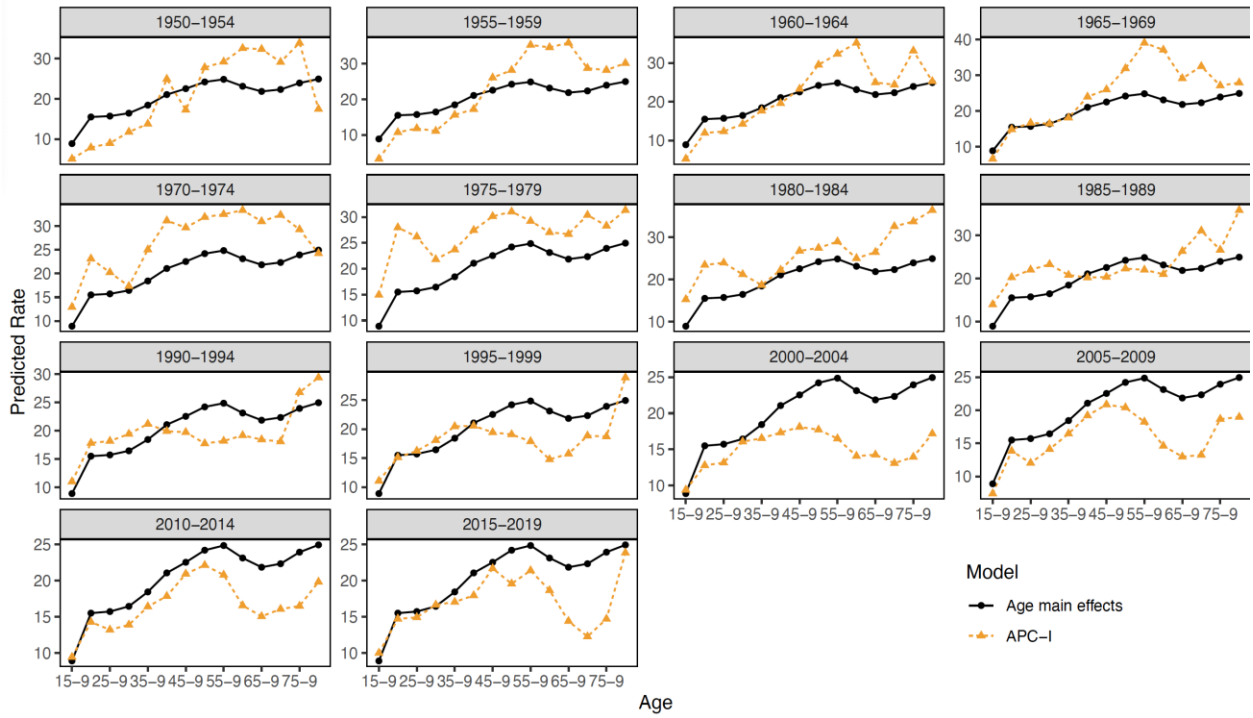

Figure 91: Predicted suicide rates for Ontario males, by model and period.

Notes: the age-only curve represents the predicted suicide rates with age main effects only. The APC-I curve represents the predicted rates with the full APC model (age, period, and cohort effects). Any deviation from the age-only curve indicates possible period and/or cohort effects across the various time periods.

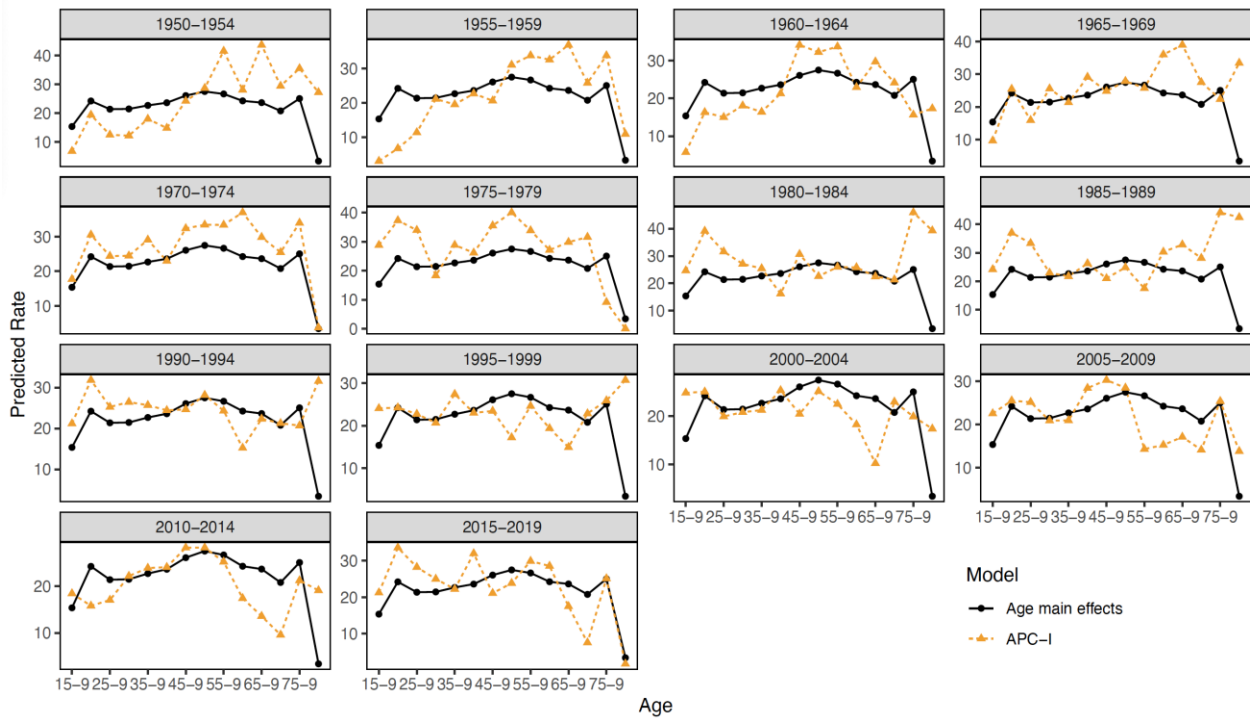

Figure 92: Predicted suicide rates for Manitoba males, by model and period.

Notes: the age-only curve represents the predicted suicide rates with age main effects only. The APC-I curve represents the predicted rates with the full APC model (age, period, and cohort effects). Any deviation from the age-only curve indicates possible period and/or cohort effects across the various time periods.

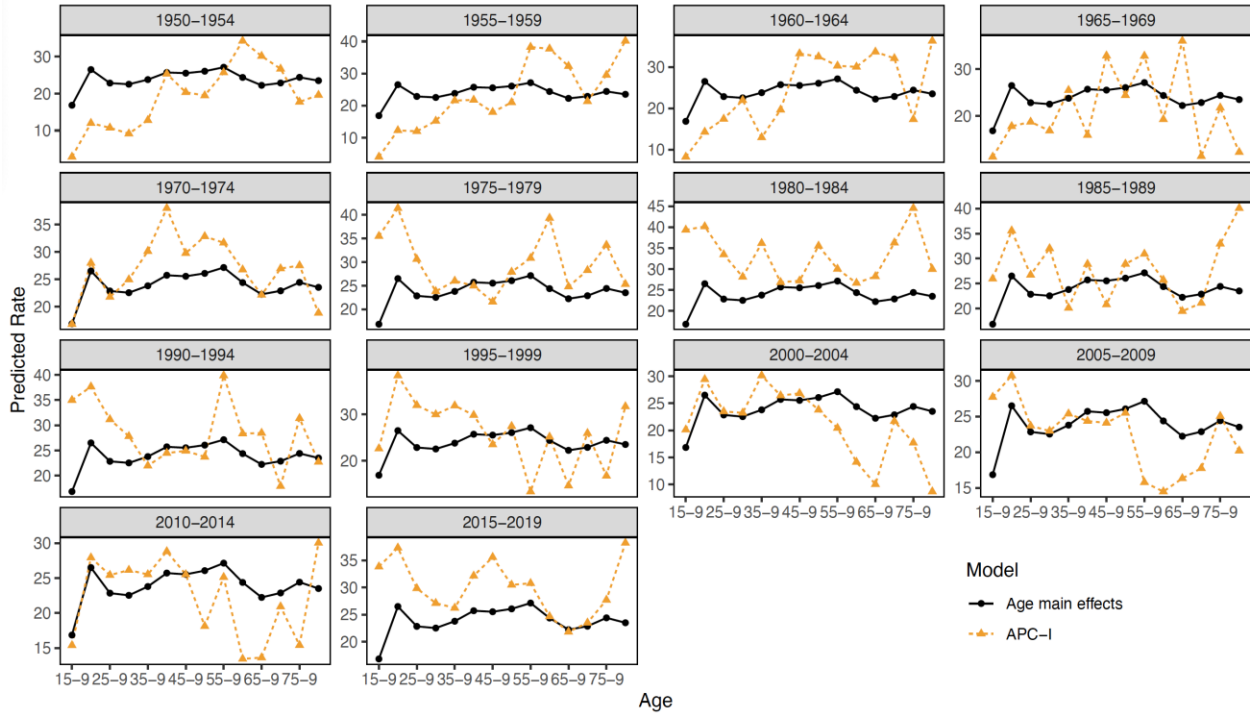

Figure 93: Predicted suicide rates for Saskatchewan males, by model and period.

Notes: the age-only curve represents the predicted suicide rates with age main effects only. The APC-I curve represents the predicted rates with the full APC model (age, period, and cohort effects). Any deviation from the age-only curve indicates possible period and/or cohort effects across the various time periods.

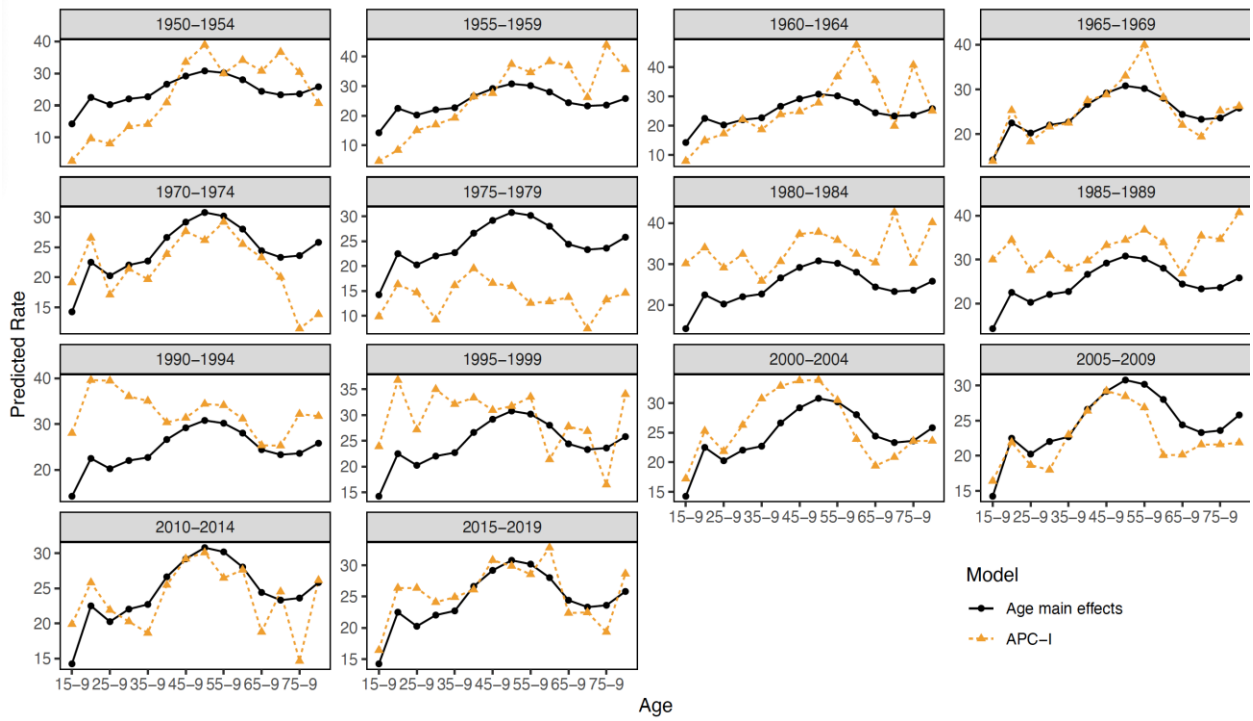

Figure 94: Predicted suicide rates for Alberta males, by model and period.

Notes: the age-only curve represents the predicted suicide rates with age main effects only. The APC-I curve represents the predicted rates with the full APC model (age, period, and cohort effects). Any deviation from the age-only curve indicates possible period and/or cohort effects across the various time periods.

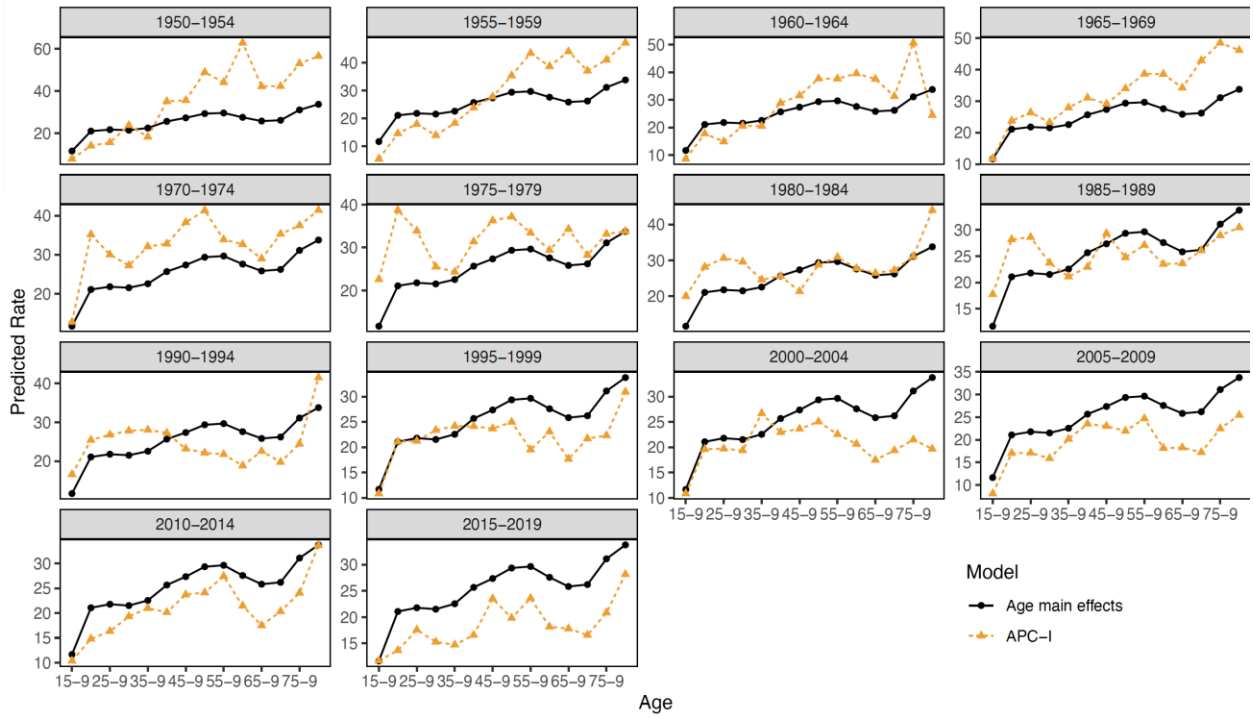

Figure 95: Predicted suicide rates for British Columbia males, by model and period.

Notes: the age-only curve represents the predicted suicide rates with age main effects only. The APC-I curve represents the predicted rates with the full APC model (age, period, and cohort effects). Any deviation from the age-only curve indicates possible period and/or cohort effects across the various time periods.

Appendix A

Meme 1: [415]

Millions of people: I feel profound loneliness and isolation, brought on by society prioritising wealth over human life
Well-meaning doctors:

[415] It's Always Sunny in Philadelphia, season 7, episode 12, "The High School Reunion Part 1," directed by Matt Shakman, written by David Hornsby, aired December 8, 2011, on FX. Meme image using a still from this episode, edited text ("antidepressant"), with a caption unrelated to the original context. Found online, source unknown.

Appendix B

CERTIFICATION OF ETHICAL ACCEPTABILITY
FOR RESEARCH INVOLVING HUMAN SUBJECTS

Name of Applicant:	Ivano Argondizzo
Department:	Faculty of Arts and Science\Sociology and Anthropology
Agency:	N/A
Title of Project:	An Age, Period, and Cohort Analysis of Suicide in Canada Between 1950 and 2019, on a per-Province Basis
Certification Number:	30020872

Valid From: October 18, 2024 To: October 17, 2025

The members of the University Human Research Ethics Committee have examined the application for a grant to support the above-named project, and consider the experimental procedures, as outlined by the applicant, to be acceptable on ethical grounds for research involving human subjects.

Dr. Richard DeMont, Chair, University Human Research Ethics Committee