4th Place Finishers and Bronze Medalists: Differences in Olympic Career Outcomes

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This paper presents evidence on whether winning an Olympic medal can impact a debut athlete's future Olympic career in terms of future Olympic Games attended and medals won. Olympedia's comprehensive data set spanning Athens 1896 to PyeongChang 2018 is used. The benefits for earning an Olympic medal vary based on time period, gender, and outcome of interest. Overall and in the recent era from Lillehammer 1994 to PyeongChang 2018, there is evidence to suggest a debut athlete who just misses out on a medal performs as well in the future as the athlete right ahead of him or her who wins a medal.

Keywords: Olympics, medal, gender, fourth place

1 Introduction

Medals in the Olympics can be determined by the smallest margins. Athletes can be so close in ability that there are ties. One such example is when three swimmers tied for the Silver medal in the 100m Men's Butterfly of Rio 2016. The margin between a Bronze medal and fourth place, can likewise be extremely narrow. Nonetheless, making it to the podium leads to much greater recognition and financial rewards. Countries including the United States, China, and India pay athletes prize money for winning medals. For PyeongChang 2018, U.S. Olympian's earned "$37,500 for

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each gold … $22,500 for each silver and $15,000 for each bronze" (Elkins, 2018). This reward money, in addition to sponsorship opportunities that arise with greater recognition, can meaningfully impact an athlete's ability to compete at the elite level. In the lead up to Rio 2016, "more than 100 US athletes started GoFundMe pages" and some "even applied for food stamps" (McGee, 2016).

Yet, there may be negative consequences to Olympic success as well. A pair of qualitative studies using interviews from 18 Australian gold medalists finds that winning the gold medal creates "significant and long-lasting change to most athletes' lives," (Jackson, Dover and Mayocchi, 1998). However, this change can be an impediment for athletes as they report how preparation and focus for subsequent competitions was mostly negatively affected (Jackson, Mayocchi and Dover, 1998). A study interviewing 17 world champion athletes in various sports finds similar conclusions (Kreiner-Phillips and Orlick, 1993) . Olympic champion swimmers Michael Phelps and Ian Thorpe have stated that expectations to win future medals can be both damaging to mental health and athlete performance (Jenkins, 2020; Press, 2018).

Anecdotal evidence of an Olympic medal changing the course of an athlete's career has scarcely been put to a rigorous test. This paper aims to provide such a test by comparing the outcomes of athletes who marginally win or miss out on a medal during their Olympic debuts. This paper makes a novel contribution to the literature studying the career consequences of success in sport, and relates to the literature investigating determinants of sports performance. The rest of the paper proceeds as follows. Section 2 describes the data source. Section 3 details the empirical strategy and presents results. Section 4 discusses possible explanations for the results. Section 5 concludes.

2 Data Source

The main data used comes from Olympedia, a website backed by the International Olympic Committee (IOC). Athlete results are available from the 1896 Athens Summer Olympics to the 2018 PyeongChang Winter Olympics. There are 275,808 results across 132,283 athletes. Information on athlete biological sex, nationality, and date of birth are available. Delayed disqualifications due to violations such as doping are reflected in the results.

3 Marginal Medalists

3.1 Threats to Validity

To reliably compare the outcomes of marginal medalists with non-medalists, three main threats to validity must be addressed. The first threat concerns athlete ability. If there are substantial and consistent differences in ability between athletes who finish in different places, then the estimated impact of winning a medal on an athlete's career will be biased. Gold medalists can be outliers among Olympic athletes, who are themselves outliers in sport. A broad comparison between gold medalists and any lower placed finishing group may not be appropriate in most Olympic disciplines. Even comparing silver medalists to a counterfactual of 4th place non-medalists could be tenuous due to potentially significant differences in ability. Yet, comparing the outcomes of bronze medalists and 4th place finishers may lead to a plausible assessment of any benefits from earning an Olympic medal. To generalize, it is best to compare marginal medal winners with those who marginally miss out, as these athletes are likely to be close in ability. Due to ties, there may be multiple marginal medalists and non-medalists for a given event.[1] This on the margin comparison includes silver medalists and even gold medalists as marginal medalists when they earn the last medal awarded due to ties.[2,3] The marginal athlete missing out also need not be in 4th place when there are ties of more than two people.

[1] Medals are awarded for the place at which athletes tie. Places immediately after the tied athletes are skipped. This may result in certain medals not being awarded. For example, if two athletes tie for first they both receive gold, and the next athlete after them places third place, receiving a bronze. Stockholm 1912 and prior, however, did not associate medals exactly with place so the gold, silver, and bronze medals were always awarded. The most medals ever awarded in a single event occurred in the Stockholm 1912 Men's Pole Vault: 1 gold, 2 silvers, 3 bronzes. (In later Olympics the 3 bronzes would not have been awarded.)

[2] There are two cases where 3 gold medals were awarded in a single event: Men's Pommel horse in London 1948 and Seoul 1988.

[3] Silver and gold medalists involved in ties are likely to be closer in ability to the rest of the field. Results are robust to the exclusion of marginal medalists who earn a silver or gold. The sample constructed in the following section includes 36 marginal silver medalists and just 1 marginal gold medalist.

A second threat to validity is the past Olympic history of an athlete. If a gold medalist in previous Olympics earns a bronze medal in a later games, it is unlikely this medal will impact his or her career as much as a person whose first Olympic medal was a bronze. Restricting analysis to only Olympic debut athletes can address this threat at the cost of sample size.

A third threat to internal validity is specific to athletes who compete in team events. The future trajectories of such athletes can depend on team dynamics, including the performance of teammates and turnover of team members. It is unclear how the impact of winning team medals should be assessed on the level of each individual team member. Therefore, athletes who compete exclusively in team events are excluded from analysis.

3.2 Sample Construction & Descriptive Analysis

I construct a data set for individual event athletes, cataloging each athlete's Olympic debut year. Each athlete is uniquely identified using name, birthday, and biological sex. Figure 1 shows how many debut athletes there are per Olympic Games by season.[4][5] The Summer Olympic Games are larger in scale compared to the Winter Olympic Games. Female athletes have been able to participate in greater numbers over time, with the gender ratio nearing parity in the modern era. There are several years with sharp decreases in the number of debut athletes due to factors including economic hardship, boycotts, and stricter qualification rules.[6]

For each athlete, I identify his or her best Olympic debut performance. Debut performance

[4] Olympic Games occur on a four-year cycle. The first ever Winter Olympic Games was Chamonix 1924. Up through 1992, the Winter and Summer Olympics were conducted during the same year, in that order. The Winter Olympic Games has since been staggered by two years beginning with Lillehammer 1994.

[5] The Olympic Games were cancelled in 1916 due to WWI, and in 1940 and 1944 during WWII.

[6] Lake Placid 1932 and Los Angeles 1932 were hosted in the United States. Amid the Great Depression, several nations were unable to sponsor athletes. In 1956, the Winter Olympic Games was hosted in Cortina d'Ampezzo, and the Summer Olympic Games was split across Melbourne and Stockholm. Due to strict Australian quarantine regulations, Stockholm was chosen to hold equestrian events months earlier than the rest of the Summer Olympic Games. Soviet Union military action during the Hungarian Revolution of 1956 led to political tension before the Olympic year was concluded in Melbourne. The International Olympic Committee (IOC) refused to suspend Soviet Union Olympic participation, leading a number of nations to boycott events held in Melbourne. Montreal 1976 was boycotted by 29 countries when the IOC did not punish New Zealand for defying a sporting embargo against apartheid South Africa. In 1980, 66 nations boycotted the Summer Olympic Games in Moscow, protesting the Soviet–Afghan War. Lillehammer 1994 introduced stricter qualification rules for the Winter Olympic Games, reducing the number of athletes from countries with warmer climates.

is measured using what I call Distance: the place that awarded the last medal in the event minus the athlete's place. Marginal medal winners have Distance 0, and marginal non-medalists have Distance -1. I take the maximum of this measure to determine best debut performance when an athlete competes in multiple individual events.

Based on athlete results in future Olympics, I create three outcome measures: Future Olympics, Future Medals, Future Gold Medals. Additional covariates are also added. Summary statistics for the data set are presented in Table 1. Variables without "Future" in their names are determined using an athlete's debut characteristics.

Given high standard deviations, I fail to reject that observed covariates are similarly distributed across all marginal medal Distances displayed. The means for Future Medals and Future Gold Medals trend upwards from left to right in the table.

3.3 Linear Estimation

Constant Medal Effect

I estimate the effect of earning a marginal medal using the difference in means between outcomes for marginal medalists and marginal non-medalists.

$$Outcomes_{yci} = \alpha + \alpha_y + \alpha_c + \beta MarginalMedal_i + X_i\gamma + \varepsilon_i \tag{1}$$

y is an index for year, c is an index for country, and i is an index for individual. $Outcomes_{yci}$ can be either $FutureOlympics_{yci}$, $FutureMedals_{yci}$, or $FutureGolds_{yci}$. These outcomes sum over Olympic results occurring after an athlete's debut games. The counts of future medals of any kind and future gold medals aggregate across both individual and team events.[7] Year fixed effects α_y

[7] Recall that only athletes who competed in at least one individual event during their debut are included in the sample. Due to exemplary individual performance, an individual event athlete may have the opportunity to compete in team events, usually relays. Thus, future team event medals are outcomes determined in part by individual event performance.

based on an individual's debut year capture time trends or era specific characteristics that may influence outcomes. Country fixed effects α_c based on an individual's debut nationality capture determinants of athlete outcomes related to national identity. $MarginalMedal_i$ is a dummy variable for being a marginal medalist during one's debut. X_i is a vector of controls including Age_i, Age_i^2, $Events_i$, $TeamEvent_i$, $FutureHomeSame_i$, and $FutureHomeDiff_i$.

$Events_i$ and $TeamEvent_i$ are used as controls since athletes who compete in more individual events and team events during their debut may have greater odds of attending a future Olympics or winning a medal. $FutureHomeSame_i$, and $FutureHomeDiff_i$ count the number of times an athlete's home country hosts an Olympics of the same or different season as the athlete's debut season, within the next 12 years. Athletes anticipating an Olympics at home may stay on the Olympic scene longer. In addition, Olympic host nations have automatic qualification for their athletes in both individual and team events (Pettigrew and Reiche, 2016). This may allow veteran athletes who are waning in ability to still compete in a home Olympics.

Table 2 presents regression results for the effect of winning a marginal medal. Under this specification the effect is assumed to be constant across genders and athletes of different Olympic seasons. Standard errors are clustered at the year-country level.[8] Columns (3), (6), and (9) are my preferred estimates as they include all control variables. These columns show no statistically significant effect of earning a marginal medal on all three outcomes. Athletes who narrowly earn a medal and those who narrowly miss out on one during their Olympic debuts appear to have equal success in future Olympics.

Heterogeneous Medal Effect

The following specifications allow the marginal medal effect to differ based on season and gender. A heterogeneous medal effect based on Olympic season is first evaluated. $Summer_i$ is a dummy variable for a games being a summer edition. S_i represents the interaction term $MarginalMedal_i * Summer_i$.

[8] Finite cluster correction G/(G-1) and degrees of freedom (N-1)/(N-K) correction are applied to standard errors.

$$Outcomes_{yci} = \alpha + \alpha_y + \alpha_c + \beta MarginalMedal_i + \delta Summer_i + \eta S_i + X_i \gamma + \varepsilon_i \tag{2}$$

Columns (3), (6), and (9) in Table 3 show insignificant marginal medal effects that do not vary based on Olympic season. Zero marginal medal effects for winter Olympic athletes cannot be rejected. F-tests for summer Olympic athletes fail to reject a null marginal medal effect as well.[9]

Next, a heterogeneous medal effect based on gender is evaluated. D_i represents the interaction term $MarginalMedal_i * Male_i$.

$$Outcomes_{yci} = \alpha + \alpha_y + \alpha_c + \beta MarginalMedal_i + \delta Male_i + \eta D_i + X_i \gamma + \varepsilon_i \tag{3}$$

Columns (3), (6), and (9) in Table 4 show little evidence of marginal medal effects. One exception is the F-test presented in column (3) that rejects the null hypothesis concerning male marginal medalists at the one percent level; male marginal medalists are less likely to attend a future Olympics. Focusing attention on marginal non-medalists, there appears to be a difference in mean outcomes for male and female athletes. Over future Olympic appearances, Male debut non-medalists win 0.071 more gold medals, and 0.103 more medals of any kind compared to their female counterparts. What is driving this heterogeneity?

The regressions used thus far span the full sample from 1896–2018. Yet, female athlete attendance in the Olympic games has risen substantially in the past few decades as depicted in Figure 1. In the full sample, the typical female athlete is more representative of the modern Olympic era than the typical male athlete. A comparison between female and male athletes of the same era may be preferable. As a result, I break the sample into three distinct eras for comparison between contemporaries. The eras are Before WWII: 1896-1936, After WWII: 1948-1992, and Staggered

[9] Although summer and winter Olympic sports are quite different in nature, it is important to keep in mind that sports within each season vary tremendously as well. Judo, swimming, and equestrian dressage are just about as different from each other as skeleton, figure skating, and biathlon.

Olympics: 1994-2018. Delineating by era also allows the marginal medal effect to vary by time period.

Table 5 presents estimates by era. Mean outcomes for male and female athletes differ significantly only during the 1948-1992 period. The F-test for column (2) suggests that narrowly winning a medal led male athletes to attend fewer future Olympics during the 1948-1992 period. Columns (4) and (5) display statistically significant marginal medal effects at the five percent level for female athletes. These effects are curiously in opposite directions for the 1896-1936 and 1948-1992 time periods. Turning attention to the modern Olympic era of 1994-2018, there is no evidence of marginal medal effects or heterogeneity by gender.

Yet, estimated coefficients for the modern era are biased towards zero due to how outcomes are defined. Outcomes aggregate over future results for debut athletes, but Olympic Games beyond PyeongChang 2018 have not occurred at this time. Thus, outcomes for recent Olympic debut athletes are censored. Sufficient time may not have passed to realize differences in outcomes due to gender or winning a medal for athletes later in the modern era. This issue is alleviated in part by redefining outcomes in the Probability Estimation section.

High Performers

Thus far, a typical athlete who just misses a medal appears to perform no worse in the future compared to his or her counterpart who just won a medal. Now I will compare the outcomes of marginal non-medalists with those of athletes who earned higher place medals during their debuts. In other words, I compare Distance -1 non-medalists with Distance 1 and Distance 2 medalists. These comparisons are subject to greater omitted variable bias from unobserved athlete ability. The MarginalMedal dummy variable, assigned 1 for the medal earning group, will have an upwards biased coefficient.[10]

Panel B in each of Tables 6 and 7 compares the outcomes of debut athletes with Distance -1 and Distance 1, loosely speaking 4th place finishers and silver medalists. Earning a medal during

[10]If ability is positively correlated with outcomes and the MarginalMedal variable, there is an upwards bias.

one's debut is now a clear predictor of earning gold medals or medals of any kind in the future. However, medalists do not attend a greater number of future Olympics. Heterogeneity in male and female average outcomes persists. On average, a female athlete who wins a debut silver medal will earn 0.126 more gold medals and 0.262 more medals of any kind during her Olympic career compared to a female non-medalist counterpart who finishes in 4th. A male athlete who wins a debut silver medal will earn 0.087 more medals of any kind over his career compared to his male counterpart. Results are driven by the 1948-1992 era as indicated by columns (2), (5), and (8) of Table 7.

Panel C in Tables 6 and 7 compares the outcomes of debut athletes with Distance -1 and Distance 2, loosely speaking 4th place finishers and gold medalists. The magnitude of the coefficient for MarginalMedal is even higher. Heterogeneity in male and female average outcomes is found once again. On average, female debut gold medalists attend 0.114 more Olympic Games, earn 0.168 more gold medals, and earn 0.302 more medals of any kind compared to their non-medalist counterparts who place 4th. Male debut gold medalists earn 0.090 more gold medals and 0.184 more medals of any kind compared to their male counterparts. Results are now driven in part by the 1994-2018 era in addition to the 1948-1992 era.

Despite censored outcome variables for the modern era of 1994-2018, column (9) in Table 7 suggests higher place medalists earn a significantly greater number of gold medals after debut. Comparing mean outcomes for 4th place finishers with high performers may not reveal the precise benefits of winning an Olympic medal due to ability confounding. Yet these comparisons help put into perspective the striking lack of differences in outcomes between 4th place finishers and 3rd place finishers, which persists even with ability bias pulling the groups apart.

3.4 Probability Estimation

Linear & Logistic Probability Effect

Thus far the marginal medal effect has been measured as a change in count of future Olympics, medals, and gold medals. I now define $BinaryOutcomes_{yci}$ that are $AttendedFutureOlympics_{yci}$,

$EarnedFutureMedal_{yci}$, and $EarnedFutureGold_{yci}$. These dummy outcomes record if an athlete attends at least one Olympics, earns at least one medal, and earns at least one gold medal after his or her debut games. This allows me to estimate the effect of winning a medal as a change in probabilities.

$$BinaryOutcomes_{yci} = \alpha + \alpha_y + \alpha_c + \beta MarginalMedal_i + \delta Male_i + \eta D_i + X_i\gamma + \varepsilon_i \tag{4}$$

I allow for heterogeneous marginal medal effects in all probability specifications. Table 8 presents estimates from a linear probability model using marginal non-medalists and marginal medalists, Distance -1 and Distance 0. The full sample across all eras is used. Columns (3), (6), and (9) provide weak evidence, significant at the 10 percent level, that female marginal medal winners are several percentage points more likely to attend a future Olympics or earn a future medal compared to female non-medalists. The F-test in column (3) indicates that male medalists are significantly less likely to attend a future Olympics compared to their non-medalist counterparts, mirroring the column (3) result discussed previously in Table 4. Examining heterogeneity among non-medalists, male non-medalists are 4.4% more likely to earn a future medal and 3.6% more likely to earn a future gold medal compared to their female counterparts.

To enforce probabilities between zero and one, a logistic regression model is estimated and displayed in Table 9. Average marginal effects corresponding to these estimates are provided in Table 10. Average marginal effects are close in size to the effects for the linear probability model, so similar conclusions can be reached with either model. One notable difference is that column (6) in Table 10 has a female marginal medal effect for earning a future medal significant at the one percent level. Female marginal medalists are 5.4% more likely to earn a future medal compared to their female non-medalist counterparts.

Panel A of Table 11 returns to the linear probability model, splitting the sample by eras. To lessen the issue of censored outcome variables, I remove Rio 2016 and PyeongChang 2018 from the modern era, so athletes who debut during these games are not included in my sample.[11] The time period 1948-1992 drives outcomes in Table 8. The modern era from 1994-2014 finds no evidence of marginal medalists doing any better than marginal non-medalists. Male and female athletes do not systematically differ in outcomes either.

High Performers

Comparisons for non-medalists and high performers are conducted using linear probability models. Panel B of Table 11 provides the comparison between non-medalists with Distance -1 and medalists with Distance 1. Panel C of Table 11 uses medalists with Distance 2. For both panels, the time period 1948-1992 indicates that earning a medal boosts the probability of earning a future medal, including a gold medal. Loosely speaking, female silver and gold medalists appear more likely to attend a future Olympics compared to their 4th place counterparts during this era. In the modern era, female silver medalists and gold medalists are 3.9% and 14.6%, respectively, more likely to win a future gold medal compared to their non-medalist counterparts. Likewise, male silver medalists and gold medalists are 4% and 9.6% more likely to win a future gold medal compared to their male counterparts.

Once again, there is positive omitted variable bias for coefficients of MarginalMedal, precluding a causal interpretation for high performers. Yet high performer comparisons help frame the limited difference in outcomes for 4th place finishers and bronze medalists.

4 Discussion

Marginal Medalists

Marginal medalists and non-medalists have similar career trajectories in terms of Olympic results. Despite missing out on a debut medal, 4th place finishers perform no worse than 3rd place

[11] The binary outcomes are still censored since the full Olympic careers of recent debut athletes are not observed. However, there is less censorship than before since I only need to observe the next time the athlete competes in the Olympics, the next medal earned of any kind, and the next gold medal earned to decide binary outcome values.

finishers in subsequent Olympic Games.

There are several ways to interpret this finding. If marginal medalists are typically higher in ability compared to marginal non-medalists, then winning a medal may have a predominantly negative impact. As mentioned in the introduction, gold medalists and champion athletes in various sports have been documented to face greater difficulty preparing for and performing during future competitions (Jackson, Dover and Mayocchi, 1998; Jackson, Mayocchi and Dover, 1998; Kreiner-Phillips and Orlick, 1993). Debut medalists may face higher expectations in subsequent Olympic Games. Athletic performance tends to suffer if elevated expectations result in higher cognitive anxiety (Woodman and Hardy, 2003).

Counterfactual thinking may also play a role. Bronze medalists have been documented to appear more joyful compared to silver medalists when presented their medals (Medvec, Madey and Gilovich, 1995). This is because Bronze medalists tend to compare their performances with 4th place finishers, while silver medalists with higher expectations compare themselves to gold medalists (McGraw, Mellers and Tetlock, 2005). 4th place finishers, aware of how close they came to winning a medal, may be less content and more motivated to improve than 3rd place finishers: "an up-and-comer who lost by such a narrow margin might consider it a symbolic victory and motivation to work harder," (Times, 2014).

Another interpretation of these results posits that marginal medalists are indeed similar in ability to marginal non-medalists, yet winning a medal has hardly any impact on one's career at all.

> "Ronda Rousey won the Bronze Medal in judo at the Beijing Olympics in 2008. She was the first American woman to do so. The medal itself would have brought her a measly four bucks, if she had been crass enough to sell it. Her reward from the United States Olympic Committee for her unique accomplishment was, as she put it, 'Ten grand and a handshake.' A few months after she came home from Beijing, she was living in her car." (Newman, 2017)

No impact for winning a medal seems to be a stretch, but it could be the case that an athlete must consistently win medals to develop a strong reputation, garnering greater support and financial opportunities over time. My analysis focuses on Bronze medalists and 4th place finishers. Silver medalists and especially gold medalists likely reap greater rewards for winning a medal. However, I am unable to isolate these effects from bias due to unobserved ability in my current empirical design.

Olympic Eras

The length of Olympic careers has increased over time, while the dominance of higher performing debut athletes relative to lower performing ones has risen in later eras.[12] Higher performing athletes win a disproportionate share of future medals and future gold medals. These descriptive findings as well as evidence from regression estimates reflect the changing nature of Olympic athletes over time.

Over the past 120 years, the Olympics and sport more broadly has transformed from a pastime associated with wealthy amateurs to a highly competitive, well-funded, and globally experienced phenomenon. Calgary/Seoul 1988 were the first Olympic Games that allowed professional athletes to compete. Though even today, few Olympic athletes aside from superstars and athletes in large sports leagues are considered professionals in the sense that they earn a living from athletics alone.[13]

Perhaps the results found for the 1948-1992 period are driven by the rising popularity of organized sports and the ability to televise games. These factors enabled male athletes to pursue sport more seriously and as a possible career. Female athletes during much of this era were still routinely discouraged from competing, had less flexible labor options, and had fewer opportunities to remain engaged in sport outside of Olympic years.[14][15] This gender inequality likely led to the heterogeneity found.

[12] Appendix Tables A1, A2, and A3 provide summary statistics for each era. See Table 1 for summary statistics for the entire sample period.

[13] The retailer Home Depot has employed over 283 United States Olympic athletes since 1992, including gold medalist Derek Parra (Valenti, 2006).

[14] (Lirgg and Feltz, 1989) reveals attitudes towards female athletics around the end of this era.

[15] For a closer look into the inclusion of women in the Olympic Games and their competitive success see (Noland and Stahler, 2016).

The modern Olympic era is more diverse and globally inclusive than ever before. It is also far more competitive and efficient in the sense that high ability individuals are more likely to ascend to the podium despite their backgrounds. This era has so far provided equal future prospects for marginal medalists and non-medalists of both genders.

5 Conclusion

This paper tests for the benefits accrued by Olympic athletes who marginally win a medal. Olympic debut 4th place finishers, bronze medalists, silver medalists, and gold medalists are compared. 4th place finishers do no worse than their bronze medalist counterparts in the future. This suggests there is typically no net benefit for an athlete's career when that athlete narrowly makes the podium. 4th place finishers are however outperformed by their silver medalist and gold medalist counterparts in the future. Athletes and commentators alike have called 4th place the "worst place" to finish in. Yet when it comes to Olympic career trajectory, 4th place is just as good as 3rd.

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Table 1: Variable Means By Marginal Medal Distance

	Distance -2	Distance -1	Distance 0	Distance 1	Distance 2
Future Olympics	0.502	0.63	0.589	0.617	0.677
	(0.795)	(0.879)	(0.854)	(0.869)	(0.929)
Future Medals	0.177	0.262	0.279	0.386	0.512
	(0.759)	(0.781)	(0.796)	(0.983)	(1.14)
Future Gold Medals	0.0592	0.101	0.0958	0.161	0.234
	(0.511)	(0.418)	(0.396)	(0.576)	(0.669)
Age	24.1	24.3	24.1	24	24
	(4.47)	(4.93)	(4.57)	(4.63)	(4.88)
Events	1.44	1.64	1.58	1.66	1.83
	(1.06)	(1.23)	(1.27)	(1.32)	(1.51)
Team Event Dummy	0.163	0.214	0.179	0.201	0.238
	(0.369)	(0.41)	(0.384)	(0.401)	(0.426)
Male Dummy	0.766	0.719	0.767	0.739	0.731
	(0.423)	(0.449)	(0.423)	(0.439)	(0.443)
Summer Dummy	0.903	0.852	0.875	0.882	0.878
	(0.296)	(0.355)	(0.33)	(0.323)	(0.328)
Future Home Same	0.123	0.129	0.129	0.16	0.171
	(0.329)	(0.336)	(0.335)	(0.367)	(0.377)
Future Home Different	0.123	0.134	0.123	0.146	0.166
	(0.329)	(0.347)	(0.329)	(0.354)	(0.375)
Observations	2907	1839	2496	2085	2140

Data for individual event athletes in debut Olympics. Marginal medal distance is taken as a maximum over all individual results for an athlete who competes in multiple events. Events refers to the total number of events an athlete competes in during their debut games. This includes team events if they also happen to compete in them. Team Event Dummy is set to one if an athlete participates in at least one team event in addition to their individual events. Future Home Same and Future Home Different count the number of Olympics in next 12 years of same (different) season hosted by the athlete's home country.

Table 2: Constant Medal Effect (-1 vs. 0)

	Future Olympics			Future Medals			Future Gold Medals		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
MarginalMedal	−0.041	−0.039*	−0.034	0.027	0.027	0.031	−0.001	0.001	0.001
	(0.028)	(0.023)	(0.028)	(0.026)	(0.024)	(0.027)	(0.016)	(0.015)	(0.016)
Age	−0.043*	−0.051**	−0.068***	−0.050***	−0.054***	−0.066***	−0.019***	−0.021***	−0.026***
	(0.022)	(0.021)	(0.023)	(0.017)	(0.018)	(0.017)	(0.006)	(0.007)	(0.007)
AgeSquared	0.0003	0.001*	0.001**	0.001**	0.001**	0.001***	0.0002**	0.0003**	0.0003***
	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0001)	(0.0001)	(0.0001)
Events	0.028	0.027	0.020	0.078*	0.076*	0.071	0.027	0.025	0.023
	(0.021)	(0.021)	(0.020)	(0.043)	(0.043)	(0.043)	(0.021)	(0.022)	(0.022)
TeamEvent	0.088	0.110*	0.095	0.206**	0.211***	0.209***	0.084*	0.086**	0.085**
	(0.065)	(0.066)	(0.063)	(0.080)	(0.078)	(0.076)	(0.044)	(0.043)	(0.043)
FutureHomeSame	0.048	−0.006	0.083	0.155***	0.117**	0.144***	0.082***	0.062***	0.065**
	(0.079)	(0.064)	(0.053)	(0.059)	(0.052)	(0.056)	(0.020)	(0.021)	(0.027)
FutureHomeDiff	−0.129**	−0.139**	−0.025	−0.039	−0.039	−0.016	−0.017	−0.013	−0.007
	(0.065)	(0.061)	(0.026)	(0.039)	(0.037)	(0.038)	(0.016)	(0.017)	(0.024)
Year fixed effects	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Country fixed effects	No	No	Yes	No	No	Yes	No	No	Yes
N	4,335	4,335	4,335	4,335	4,335	4,335	4,335	4,335	4,335
Adjusted R^2	0.027	0.133	0.168	0.065	0.092	0.093	0.038	0.058	0.057

Notes: *** denotes significance at 1 percent, ** at 5 percent, and * at 10 percent. Standard errors are clustered at the Year-Country level.

Table 3: Season Heterogeneous Medal Effect (-1 vs. 0)

	Future Olympics			Future Medals			Future Gold Medals		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
MarginalMedal	−0.034	−0.001	0.008	0.036	0.049	0.054	0.046	0.054	0.051
	(0.060)	(0.061)	(0.060)	(0.091)	(0.091)	(0.089)	(0.078)	(0.077)	(0.078)
Summer	−0.225*	−0.126	−0.079	−0.185**	−0.111	−0.089	−0.071	−0.039	−0.037
	(0.124)	(0.106)	(0.112)	(0.086)	(0.093)	(0.086)	(0.046)	(0.044)	(0.040)
MarginalMedal*Summer (S)	−0.002	−0.043	−0.048	−0.006	−0.024	−0.026	−0.052	−0.061	−0.058
	(0.073)	(0.073)	(0.070)	(0.090)	(0.090)	(0.087)	(0.077)	(0.078)	(0.078)
Age	−0.047**	−0.052**	−0.068***	−0.053***	−0.055***	−0.066***	−0.021***	−0.022***	−0.026***
	(0.024)	(0.022)	(0.023)	(0.019)	(0.018)	(0.017)	(0.007)	(0.007)	(0.007)
AgeSquared	0.0004	0.001*	0.001**	0.001**	0.001**	0.001***	0.0002**	0.0003**	0.0003***
	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0001)	(0.0001)	(0.0001)
Events	0.014	0.020	0.017	0.066	0.070	0.067	0.021	0.022	0.021
	(0.019)	(0.020)	(0.020)	(0.045)	(0.045)	(0.044)	(0.023)	(0.023)	(0.023)
TeamEvent	0.106*	0.123*	0.103*	0.221***	0.222***	0.217***	0.091**	0.091**	0.090**
	(0.063)	(0.063)	(0.061)	(0.081)	(0.078)	(0.076)	(0.045)	(0.043)	(0.043)
FutureHomeSame	0.037	−0.008	0.080	0.145**	0.116**	0.142***	0.077***	0.061***	0.063**
	(0.077)	(0.064)	(0.051)	(0.056)	(0.051)	(0.054)	(0.020)	(0.020)	(0.026)
FutureHomeDiff	−0.120*	−0.141**	−0.026	−0.032	−0.041	−0.018	−0.013	−0.014	−0.007
	(0.064)	(0.061)	(0.029)	(0.038)	(0.039)	(0.039)	(0.014)	(0.018)	(0.024)
Year fixed effects	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Country fixed effects	No	No	Yes	No	No	Yes	No	No	Yes
F-test: MarginalMedal+S = 0	0.283	0.116	0.213	0.224	0.270	0.272	0.623	0.559	0.571
N	4,335	4,335	4,335	4,335	4,335	4,335	4,335	4,335	4,335
Adjusted R^2	0.035	0.135	0.168	0.071	0.093	0.093	0.044	0.060	0.059

Notes: *** denotes significance at 1 percent, ** at 5 percent, and * at 10 percent. Standard errors are clustered at the Year-Country level. F-test p-value reported.

Table 4: Gender Heterogeneous Medal Effect (-1 vs. 0)

	Future Olympics			Future Medals			Future Gold Medals		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
MarginalMedal	0.053	0.070	0.085	0.125	0.133*	0.139*	0.060	0.064	0.064
	(0.082)	(0.063)	(0.067)	(0.083)	(0.080)	(0.083)	(0.041)	(0.041)	(0.042)
Male	−0.020	0.095**	0.095*	0.046	0.100***	0.103**	0.047**	0.070***	0.071***
	(0.059)	(0.047)	(0.050)	(0.046)	(0.038)	(0.041)	(0.020)	(0.021)	(0.020)
MarginalMedal*Male (D)	−0.122	−0.149**	−0.161**	−0.131	−0.145*	−0.148*	−0.083*	−0.087*	−0.087*
	(0.080)	(0.065)	(0.065)	(0.088)	(0.086)	(0.087)	(0.045)	(0.045)	(0.047)
Age	−0.039*	−0.052**	−0.070***	−0.050***	−0.057***	−0.068***	−0.020***	−0.023***	−0.028***
	(0.023)	(0.022)	(0.023)	(0.017)	(0.017)	(0.016)	(0.006)	(0.007)	(0.007)
AgeSquared	0.0003	0.001*	0.001**	0.001**	0.001***	0.001***	0.0002**	0.0003***	0.0004***
	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0001)	(0.0001)	(0.0001)
Events	0.027	0.027	0.021	0.078*	0.076*	0.071	0.027	0.025	0.024
	(0.021)	(0.021)	(0.020)	(0.043)	(0.044)	(0.044)	(0.022)	(0.022)	(0.022)
TeamEvent	0.082	0.109	0.092	0.203**	0.210***	0.207***	0.083*	0.086**	0.085**
	(0.066)	(0.067)	(0.063)	(0.081)	(0.078)	(0.076)	(0.043)	(0.042)	(0.042)
FutureHomeSame	0.044	−0.007	0.082	0.153***	0.118**	0.144***	0.081***	0.062***	0.066**
	(0.080)	(0.063)	(0.051)	(0.059)	(0.051)	(0.055)	(0.021)	(0.021)	(0.027)
FutureHomeDiff	−0.127**	−0.136**	−0.024	−0.037	−0.036	−0.015	−0.016	−0.011	−0.006
	(0.064)	(0.061)	(0.027)	(0.039)	(0.037)	(0.038)	(0.015)	(0.016)	(0.024)
Year fixed effects	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Country fixed effects	No	No	Yes	No	No	Yes	No	No	Yes
F-test: MarginalMedal+D = 0	0.001	0.000	0.002	0.787	0.599	0.685	0.170	0.148	0.181
N	4,335	4,335	4,335	4,335	4,335	4,335	4,335	4,335	4,335
Adjusted R^2	0.030	0.134	0.169	0.066	0.093	0.094	0.039	0.060	0.059

Notes: *** denotes significance at 1 percent, ** at 5 percent, and * at 10 percent. Standard errors are clustered at the Year-Country level. F-test p-value reported.

Table 5: Subsample Gender Heterogeneous Medal Effect (-1 vs. 0)

	Future Olympics			Future Medals			Future Gold Medals		
	1896-1936	1948-1992	1994-2018	1896-1936	1948-1992	1994-2018	1896-1936	1948-1992	1994-2018
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
MarginalMedal	0.091	0.173	0.003	−0.075**	0.259**	0.074	−0.042	0.094	0.067
	(0.117)	(0.111)	(0.085)	(0.033)	(0.131)	(0.090)	(0.046)	(0.062)	(0.060)
Male	0.018	0.250***	−0.069	0.057	0.230***	−0.019	0.027	0.094***	0.054
	(0.105)	(0.093)	(0.065)	(0.102)	(0.051)	(0.082)	(0.050)	(0.028)	(0.047)
MarginalMedal*Male (D)	−0.128	−0.304**	−0.021	0.037	−0.276**	−0.022	−0.002	−0.117*	−0.069
	(0.141)	(0.128)	(0.082)	(0.057)	(0.136)	(0.131)	(0.051)	(0.070)	(0.080)
Age	−0.046	−0.011	−0.160***	−0.038	−0.009	−0.250***	−0.009	−0.009	−0.106***
	(0.030)	(0.046)	(0.042)	(0.028)	(0.019)	(0.059)	(0.010)	(0.007)	(0.037)
AgeSquared	0.001	−0.0003	0.002***	0.0005	−0.0002	0.004***	0.0001	0.00002	0.002**
	(0.0004)	(0.001)	(0.001)	(0.0004)	(0.0004)	(0.001)	(0.0001)	(0.0001)	(0.001)
Events	0.072*	0.016	−0.030	0.060	0.088	0.041	0.027	0.036	−0.011
	(0.037)	(0.030)	(0.032)	(0.043)	(0.073)	(0.047)	(0.023)	(0.035)	(0.021)
TeamEvent	0.091	0.086	0.099	0.237***	0.189**	0.176**	0.094	0.060	0.123**
	(0.058)	(0.110)	(0.072)	(0.089)	(0.096)	(0.069)	(0.077)	(0.042)	(0.058)
FutureHomeSame	0.017	0.119	−0.087	0.179**	0.241***	−0.053	0.095	0.102**	−0.052*
	(0.056)	(0.077)	(0.146)	(0.079)	(0.081)	(0.073)	(0.062)	(0.042)	(0.027)
FutureHomeDiff	0.157*	−0.009	−0.160	0.012	0.025	−0.077	0.034	−0.004	−0.059**
	(0.094)	(0.016)		(0.119)	(0.040)		(0.048)	(0.034)	(0.028)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
F-test: MarginalMedal+D = 0	0.303	0.003	0.794	0.392	0.542	0.501	0.102	0.264	0.974
N	834	2,092	1,409	834	2,092	1,409	834	2,092	1,409
Adjusted R^2	0.087	0.101	0.265	0.087	0.095	0.152	0.070	0.052	0.087

Notes: *** denotes significance at 1 percent, ** at 5 percent, and * at 10 percent. Standard errors are clustered at the Year-Country level. F-test p-value reported. The subsample time periods are Before WWII: 1896-1936, After WWII: 1948-1992, Staggered: 1994-2018.

Table 6: Gender Heterogeneous Medal Effect Comparison

	Future Olympics			Future Medals			Future Gold Medals		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A. (-1 vs. 0)									
MarginalMedal	0.053	0.070	0.085	0.125	0.133*	0.139*	0.060	0.064	0.064
	(0.082)	(0.063)	(0.067)	(0.083)	(0.080)	(0.083)	(0.041)	(0.041)	(0.042)
Male	−0.020	0.095**	0.095*	0.046	0.100***	0.103**	0.047**	0.070***	0.071***
	(0.059)	(0.047)	(0.050)	(0.046)	(0.038)	(0.041)	(0.020)	(0.021)	(0.020)
MarginalMedal*Male (D)	−0.122	−0.149**	−0.161**	−0.131	−0.145*	−0.148*	−0.083*	−0.087*	−0.087*
	(0.080)	(0.065)	(0.065)	(0.088)	(0.086)	(0.087)	(0.045)	(0.045)	(0.047)
F-test: MarginalMedal+D = 0	0.001	0.000	0.002	0.787	0.599	0.685	0.170	0.148	0.181
N	4,335	4,335	4,335	4,335	4,335	4,335	4,335	4,335	4,335
Adjusted R^2	0.030	0.134	0.169	0.066	0.093	0.094	0.039	0.060	0.059
Panel B. (-1 vs. 1)									
MarginalMedal	0.017	0.043	0.078	0.230***	0.247***	0.262***	0.116***	0.122***	0.126***
	(0.071)	(0.064)	(0.067)	(0.082)	(0.076)	(0.079)	(0.038)	(0.034)	(0.035)
Male	−0.027	0.086*	0.099**	0.063	0.119***	0.130***	0.059***	0.085***	0.089***
	(0.057)	(0.044)	(0.046)	(0.045)	(0.040)	(0.042)	(0.021)	(0.025)	(0.025)
MarginalMedal*Male (D)	−0.046	−0.068	−0.086	−0.156*	−0.163*	−0.175**	−0.082*	−0.084**	−0.090**
	(0.079)	(0.067)	(0.065)	(0.091)	(0.086)	(0.086)	(0.042)	(0.039)	(0.039)
F-test: MarginalMedal+D = 0	0.478	0.508	0.848	0.002	0.000	0.000	0.065	0.038	0.061
N	3,924	3,924	3,924	3,924	3,924	3,924	3,924	3,924	3,924
Adjusted R^2	0.020	0.128	0.150	0.079	0.108	0.102	0.049	0.065	0.058
Panel C. (-1 vs. 2)									
MarginalMedal	0.048	0.079	0.114**	0.294***	0.312***	0.302***	0.164***	0.171***	0.168***
	(0.069)	(0.062)	(0.058)	(0.074)	(0.073)	(0.072)	(0.035)	(0.035)	(0.036)
Male	−0.045	0.066	0.073	0.043	0.090**	0.094**	0.054***	0.070***	0.075***
	(0.055)	(0.043)	(0.049)	(0.044)	(0.037)	(0.042)	(0.020)	(0.022)	(0.022)
MarginalMedal*Male (D)	−0.007	−0.035	−0.047	−0.107	−0.114*	−0.118*	−0.067*	−0.069*	−0.078**
	(0.066)	(0.057)	(0.056)	(0.073)	(0.069)	(0.069)	(0.040)	(0.037)	(0.037)
F-test: MarginalMedal+D = 0	0.415	0.391	0.226	0.000	0.000	0.000	0.000	0.000	0.000
N	3,979	3,979	3,979	3,979	3,979	3,979	3,979	3,979	3,979
Adjusted R^2	0.011	0.107	0.139	0.077	0.104	0.111	0.052	0.068	0.072
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Country fixed effects	No	No	Yes	No	No	Yes	No	No	Yes

Notes: *** denotes significance at 1 percent, ** at 5 percent, and * at 10 percent. Standard errors are clustered at the Year-Country level. F-test p-value reported.

Table 7: Subsample Gender Heterogeneous Medal Effect Comparison

	Future Olympics			Future Medals			Future Gold Medals		
	1896-1936	1948-1992	1994-2018	1896-1936	1948-1992	1994-2018	1896-1936	1948-1992	1994-2018
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A. (-1 vs. 0)									
MarginalMedal	0.091	0.173	0.003	-0.075^{**}	0.259^{**}	0.074	-0.042	0.094	0.067
	(0.117)	(0.111)	(0.085)	(0.033)	(0.131)	(0.090)	(0.046)	(0.062)	(0.060)
Male	0.018	0.250^{***}	-0.069	0.057	0.230^{***}	-0.019	0.027	0.094^{***}	0.054
	(0.105)	(0.093)	(0.065)	(0.102)	(0.051)	(0.082)	(0.050)	(0.028)	(0.047)
MarginalMedal*Male (D)	-0.128	-0.304^{**}	-0.021	0.037	-0.276^{**}	-0.022	-0.002	-0.117^{*}	-0.069
	(0.141)	(0.128)	(0.082)	(0.057)	(0.136)	(0.131)	(0.051)	(0.070)	(0.080)
F-test: MarginalMedal+D = 0	0.303	0.003	0.794	0.392	0.542	0.501	0.102	0.264	0.974
N	834	2,092	1,409	834	2,092	1,409	834	2,092	1,409
Adjusted R^2	0.087	0.101	0.265	0.087	0.095	0.152	0.070	0.052	0.087
Panel B. (-1 vs. 1)									
MarginalMedal	0.162	0.201^{***}	-0.044	0.130	0.436^{***}	0.154	0.072	0.190^{***}	0.095^{***}
	(0.128)	(0.077)	(0.083)	(0.099)	(0.096)	(0.107)	(0.061)	(0.054)	(0.024)
Male	0.028	0.216^{***}	-0.033	0.047	0.269^{***}	0.017	0.025	0.124^{***}	0.070
	(0.104)	(0.083)	(0.067)	(0.075)	(0.033)	(0.105)	(0.053)	(0.026)	(0.058)
MarginalMedal*Male (D)	-0.152	-0.235^{**}	0.101^{*}	-0.081	-0.346^{***}	-0.009	-0.068	-0.141^{***}	-0.032
	(0.120)	(0.091)	(0.055)	(0.122)	(0.092)	(0.159)	(0.062)	(0.054)	(0.049)
F-test: MarginalMedal+D = 0	0.794	0.618	0.561	1.000	0.028	0.063	0.809	0.076	0.115
N	827	1,889	1,208	827	1,889	1,208	827	1,889	1,208
Adjusted R^2	0.099	0.071	0.243	0.066	0.104	0.123	0.038	0.058	0.056
Panel C. (-1 vs. 2)									
MarginalMedal	-0.025	0.219^{***}	0.054	0.012	0.390^{***}	0.265^{***}	-0.002	0.171^{***}	0.191^{***}
	(0.065)	(0.078)	(0.070)	(0.093)	(0.131)	(0.062)	(0.051)	(0.057)	(0.055)
Male	-0.028	0.189^{**}	-0.051	0.010	0.205^{***}	-0.026	0.013	0.100^{***}	0.052
	(0.100)	(0.090)	(0.073)	(0.118)	(0.017)	(0.111)	(0.058)	(0.013)	(0.054)
MarginalMedal*Male (D)	0.141	-0.202^{***}	0.040	0.175	-0.225^{*}	-0.045^{***}	0.078	-0.071	-0.103^{***}
	(0.162)	(0.051)	(0.069)	(0.136)	(0.120)	(0.008)	(0.055)	(0.055)	(0.038)
F-test: MarginalMedal+D = 0	0.215	0.818	0.308	0.011	0.001	0.000	0.067	0.001	0.009
N	831	1,927	1,221	831	1,927	1,221	831	1,927	1,221
Adjusted R^2	0.101	0.076	0.219	0.107	0.089	0.197	0.055	0.062	0.118
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: *** denotes significance at 1 percent, ** at 5 percent, and * at 10 percent. Standard errors are clustered at the Year-Country level. F-test p-value reported. The subsample time periods are Before WWII: 1896-1936, After WWII: 1948-1992, Staggered: 1994-2018.

Table 8: Linear Probability Medal Effect (-1 vs. 0)

	Attended Future Olympics			Earned Future Medal			Earned Future Gold Medal		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
MarginalMedal	0.031	0.042*	0.047*	0.050	0.055*	0.058*	0.027	0.030*	0.030*
	(0.033)	(0.025)	(0.026)	(0.031)	(0.029)	(0.031)	(0.016)	(0.015)	(0.016)
Male	−0.025	0.041**	0.035	0.013	0.041**	0.044**	0.021*	0.034***	0.036***
	(0.032)	(0.020)	(0.022)	(0.023)	(0.017)	(0.019)	(0.012)	(0.012)	(0.011)
MarginalMedal*Male (D)	−0.064*	−0.081***	−0.084***	−0.044	−0.051*	−0.053*	−0.036	−0.039*	−0.039*
	(0.033)	(0.026)	(0.026)	(0.032)	(0.029)	(0.030)	(0.022)	(0.021)	(0.022)
Age	−0.011	−0.021**	−0.029***	−0.027***	−0.031***	−0.037***	−0.013***	−0.015***	−0.019***
	(0.012)	(0.010)	(0.010)	(0.008)	(0.007)	(0.007)	(0.002)	(0.002)	(0.002)
AgeSquared	−0.00001	0.0002	0.0003**	0.0003**	0.0004***	0.0005***	0.0001***	0.0002***	0.0002***
	(0.0002)	(0.0001)	(0.0002)	(0.0001)	(0.0001)	(0.0001)	(0.00003)	(0.00003)	(0.00004)
Events	0.021*	0.021**	0.018*	0.012	0.010	0.008	0.006	0.006	0.005
	(0.011)	(0.010)	(0.009)	(0.010)	(0.010)	(0.011)	(0.009)	(0.009)	(0.010)
TeamEvent	0.032	0.050	0.038	0.097***	0.104***	0.104***	0.065***	0.067***	0.066***
	(0.033)	(0.031)	(0.030)	(0.028)	(0.026)	(0.026)	(0.023)	(0.023)	(0.023)
FutureHomeSame	0.004	−0.022	0.034	0.061***	0.044***	0.060***	0.051***	0.040***	0.043***
	(0.043)	(0.034)	(0.028)	(0.022)	(0.017)	(0.020)	(0.012)	(0.013)	(0.016)
FutureHomeDiff	−0.053	−0.070	0.005	−0.019	−0.020	−0.005	−0.013	−0.012	−0.009
	(0.047)	(0.045)	(0.015)	(0.018)	(0.018)	(0.015)	(0.011)	(0.012)	(0.016)
Year fixed effects	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Country fixed effects	No	No	Yes	No	No	Yes	No	No	Yes
F-test: MarginalMedal+D = 0	0.002	0.000	0.000	0.607	0.727	0.701	0.416	0.412	0.459
N	4,335	4,335	4,335	4,335	4,335	4,335	4,335	4,335	4,335
Adjusted R^2	0.024	0.140	0.168	0.045	0.079	0.082	0.031	0.049	0.054

Notes: *** denotes significance at 1 percent, ** at 5 percent, and * at 10 percent. Standard errors are clustered at the Year-Country level. F-test p-value reported.

Table 9: Logit Medal Effect (-1 vs. 0)

	Attended Future Olympics			Earned Future Medal			Earned Future Gold Medal		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
MarginalMedal	0.125	0.199*	0.236*	0.347*	0.410**	0.446**	0.380*	0.450**	0.466**
	(0.133)	(0.121)	(0.135)	(0.205)	(0.202)	(0.224)	(0.206)	(0.198)	(0.226)
Male	−0.106	0.199**	0.190*	0.112	0.332**	0.347**	0.340*	0.550***	0.562***
	(0.132)	(0.093)	(0.107)	(0.168)	(0.137)	(0.153)	(0.189)	(0.193)	(0.195)
MarginalMedal*Male (D)	−0.265**	−0.388***	−0.427***	−0.294	−0.373*	−0.393*	−0.524*	−0.603**	−0.614*
	(0.135)	(0.125)	(0.133)	(0.221)	(0.214)	(0.226)	(0.303)	(0.301)	(0.330)
Age	−0.018	−0.088	−0.123*	−0.139	−0.193**	−0.250***	−0.064	−0.130	−0.156
	(0.064)	(0.062)	(0.071)	(0.105)	(0.096)	(0.086)	(0.159)	(0.161)	(0.201)
AgeSquared	−0.001	0.001	0.001	0.001	0.002	0.003	−0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.004)	(0.004)	(0.004)
Events	0.085*	0.098**	0.085*	0.066	0.061	0.044	0.063	0.061	0.058
	(0.044)	(0.050)	(0.048)	(0.057)	(0.061)	(0.068)	(0.088)	(0.093)	(0.110)
TeamEvent	0.131	0.238	0.189	0.621***	0.685***	0.704***	0.791***	0.831***	0.828***
	(0.133)	(0.150)	(0.153)	(0.154)	(0.158)	(0.153)	(0.229)	(0.231)	(0.238)
FutureHomeSame	0.018	−0.104	0.184	0.417***	0.293***	0.417***	0.657***	0.483***	0.562***
	(0.181)	(0.158)	(0.129)	(0.130)	(0.098)	(0.126)	(0.113)	(0.128)	(0.188)
FutureHomeDiff	−0.223	−0.313	0.056	−0.147	−0.161	−0.047	−0.196	−0.201	−0.180
	(0.202)	(0.202)	(0.042)	(0.128)	(0.127)	(0.128)	(0.146)	(0.171)	(0.250)
Year fixed effects	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Country fixed effects	No	No	Yes	No	No	Yes	No	No	Yes
Wald-test: MarginalMedal+D = 0	0.002	0.000	0.000	0.568	0.696	0.606	0.437	0.430	0.481
Adjusted Pseudo R2	0.016	0.115	0.122	0.045	0.083	0.059	0.051	0.073	0.03
N	4,335	4,335	4,335	4,335	4,335	4,335	4,335	4,335	4,335

Notes: *** denotes significance at 1 percent, ** at 5 percent, and * at 10 percent. Standard errors are clustered at the Year-Country level. Wald-test p-value reported.

Table 10: Average Marginal Effects for Logit Medal Effect (-1 vs. 0)

	Attended Future Olympics			Earned Future Medal			Earned Future Gold Medal		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
MarginalMedal	0.030	0.041	0.046*	0.046**	0.052**	0.054***	0.024*	0.028*	0.028*
	(0.029)	(0.027)	(0.027)	(0.021)	(0.021)	(0.021)	(0.015)	(0.015)	(0.014)
Male	−0.025	0.041*	0.037	0.015	0.042**	0.042**	0.022	0.034**	0.033**
	(0.025)	(0.024)	(0.024)	(0.019)	(0.019)	(0.019)	(0.014)	(0.014)	(0.014)
MarginalMedal*Male (D)	−0.063*	−0.080**	−0.083***	−0.039	−0.047*	−0.048**	−0.034*	−0.037**	−0.036**
	(0.034)	(0.032)	(0.031)	(0.025)	(0.025)	(0.024)	(0.017)	(0.017)	(0.017)
Age	−0.004	−0.018**	−0.024***	−0.018**	−0.024***	−0.030***	−0.004	−0.008	−0.009
	(0.010)	(0.009)	(0.009)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
AgeSquared	−0.0002	0.0002	0.0002	0.0001	0.0002	0.0003**	−0.0001	0.00003	0.00004
	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0001)	(0.0001)	(0.0002)	(0.0002)	(0.0002)
Events	0.020***	0.020***	0.017**	0.009*	0.008	0.005	0.004	0.004	0.003
	(0.008)	(0.007)	(0.007)	(0.005)	(0.005)	(0.005)	(0.003)	(0.003)	(0.003)
TeamEvent	0.031	0.049**	0.036	0.083***	0.087***	0.086***	0.051***	0.052***	0.049***
	(0.024)	(0.023)	(0.023)	(0.016)	(0.016)	(0.016)	(0.011)	(0.011)	(0.011)
FutureHomeSame	0.004	−0.021	0.036	0.055***	0.037**	0.051***	0.042***	0.030***	0.033***
	(0.023)	(0.022)	(0.022)	(0.016)	(0.016)	(0.017)	(0.010)	(0.010)	(0.011)
FutureHomeDiff	−0.053**	−0.065***	0.011	−0.020	−0.020	−0.006	−0.013	−0.012	−0.011
	(0.023)	(0.021)	(0.024)	(0.017)	(0.017)	(0.019)	(0.012)	(0.012)	(0.013)

Notes: *** denotes significance at 1 percent, ** at 5 percent, and * at 10 percent.
See Table 11 for corresponding logistic regressions.

Table 11: Subsample Linear Probability Medal Effect Comparison

	Attended Future Olympics			Earned Future Medal			Earned Future Gold Medal		
	1896-1936	1948-1992	1994-2014	1896-1936	1948-1992	1994-2014	1896-1936	1948-1992	1994-2014
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A. (-1 vs. 0)									
MarginalMedal	0.088	0.090***	−0.003	−0.061	0.122***	0.019	−0.035	0.057**	0.023
	(0.117)	(0.031)	(0.058)	(0.042)	(0.046)	(0.056)	(0.042)	(0.027)	(0.026)
Male	0.011	0.100***	−0.027	−0.016	0.113***	−0.048	−0.004	0.063***	0.007
	(0.075)	(0.036)	(0.061)	(0.048)	(0.030)	(0.044)	(0.033)	(0.019)	(0.024)
MarginalMedal*Male (D)	−0.105	−0.137***	−0.069	0.046	−0.127***	0.043	0.016	−0.075**	−0.006
	(0.119)	(0.034)	(0.078)	(0.051)	(0.041)	(0.077)	(0.045)	(0.036)	(0.045)
F-test: MarginalMedal+D = 0	0.423	0.001	0.085	0.502	0.796	0.156	0.275	0.310	0.606
N	834	2,092	1,161	834	2,092	1,161	834	2,092	1,161
Adjusted R^2	0.080	0.082	0.088	0.087	0.055	0.088	0.093	0.034	0.054
Panel B. (-1 vs. 1)									
MarginalMedal	0.120***	0.121***	−0.005	0.071	0.184***	0.055	0.060	0.094**	0.039***
	(0.045)	(0.034)	(0.042)	(0.055)	(0.047)	(0.047)	(0.048)	(0.038)	(0.011)
Male	0.006	0.087**	−0.005	−0.021	0.119***	−0.036	−0.007	0.074***	0.018
	(0.068)	(0.041)	(0.061)	(0.017)	(0.028)	(0.054)	(0.035)	(0.016)	(0.028)
MarginalMedal*Male (D)	−0.103**	−0.141***	0.001	−0.035	−0.133**	0.027	−0.062	−0.060	0.001
	(0.052)	(0.032)	(0.046)	(0.065)	(0.052)	(0.062)	(0.049)	(0.038)	(0.023)
F-test: MarginalMedal+D = 0	0.670	0.509	0.941	0.002	0.067	0.008	0.911	0.066	0.012
N	827	1,889	1,014	827	1,889	1,014	827	1,889	1,014
Adjusted R^2	0.119	0.081	0.072	0.089	0.063	0.079	0.049	0.046	0.061
Panel C. (-1 vs. 2)									
MarginalMedal	−0.031	0.087**	0.060	−0.037	0.142***	0.133***	−0.011	0.078***	0.146***
	(0.060)	(0.042)	(0.048)	(0.061)	(0.040)	(0.025)	(0.036)	(0.020)	(0.053)
Male	−0.017	0.067	−0.004	−0.047	0.089***	−0.050	−0.008	0.058***	0.005
	(0.071)	(0.042)	(0.071)	(0.047)	(0.021)	(0.067)	(0.039)	(0.012)	(0.035)
MarginalMedal*Male (D)	0.087	−0.068***	−0.039	0.133*	−0.052	0.049	0.054	−0.023*	−0.050
	(0.091)	(0.025)	(0.054)	(0.075)	(0.044)	(0.031)	(0.035)	(0.012)	(0.037)
F-test: MarginalMedal+D = 0	0.172	0.519	0.663	0.029	0.001	0.000	0.102	0.005	0.000
N	831	1,927	1,020	831	1,927	1,020	831	1,927	1,020
Adjusted R^2	0.095	0.090	0.043	0.103	0.062	0.108	0.058	0.048	0.090
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: *** denotes significance at 1 percent, ** at 5 percent, and * at 10 percent. Standard errors are clustered at the Year-Country level. F-test p-value reported. The subsample time periods are Before WWII: 1896-1936, After WWII: 1948-1992, Staggered: 1994-2014

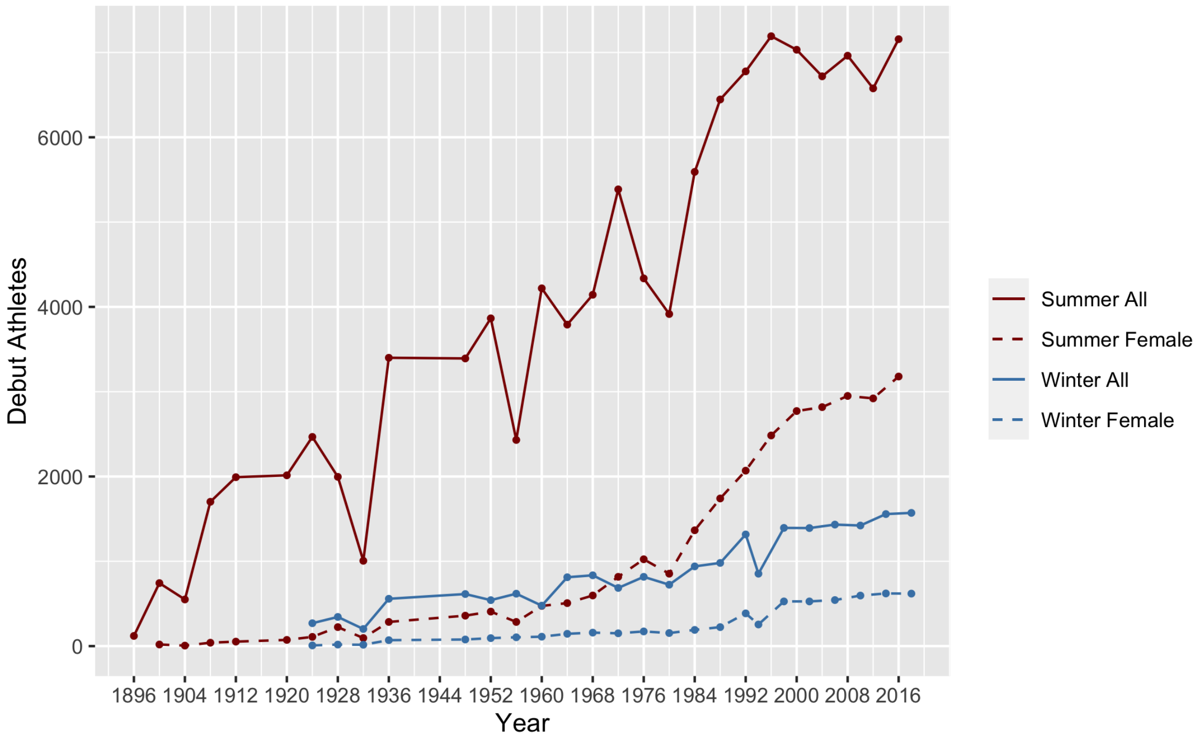

Figure 1: Individual Event Debut Athletes

Appendix

Table A1: Before WWII: 1896-1936 Variable Means By Marginal Medal Distance

	Distance -2	Distance -1	Distance 0	Distance 1	Distance 2
Future Olympics	0.27	0.312	0.304	0.325	0.416
	(0.578)	(0.651)	(0.625)	(0.654)	(0.756)
Future Medals	0.132	0.19	0.164	0.221	0.387
	(0.549)	(0.632)	(0.626)	(0.7)	(0.968)
Future Gold Medals	0.035	0.0911	0.0578	0.088	0.188
	(0.255)	(0.395)	(0.277)	(0.419)	(0.653)
Age	24.9	25.8	25.7	25.1	25.6
	(5.83)	(6.82)	(6.57)	(6.06)	(7.06)
Events	1.63	1.67	1.79	1.9	2.15
	(1.31)	(1.29)	(1.44)	(1.56)	(1.85)
Team Event Dummy	0.235	0.221	0.242	0.228	0.264
	(0.424)	(0.416)	(0.429)	(0.42)	(0.441)
Male Dummy	0.909	0.906	0.913	0.905	0.904
	(0.288)	(0.292)	(0.282)	(0.293)	(0.295)
Summer Dummy	0.963	0.951	0.949	0.948	0.96
	(0.189)	(0.217)	(0.22)	(0.222)	(0.197)
Future Home Same	0.19	0.161	0.184	0.183	0.215
	(0.393)	(0.368)	(0.388)	(0.387)	(0.411)
Future Home Different	0.177	0.135	0.156	0.153	0.166
	(0.382)	(0.343)	(0.363)	(0.361)	(0.372)
Observations	515	384	450	443	447

Data for individual event athletes in debut Olympics. Marginal medal distance is taken as a maximum over all individual results for an athlete who competes in multiple events. Events refers to the total number of events an athlete competes in during their debut games. This includes team events if they also happen to compete in them. Team Event Dummy is set to one if an athlete participates in at least one team event in addition to their individual events. Future Home Same and Future Home Different count the number of Olympics in next 12 years of same (different) season hosted by the athlete's home country.

Table A2: After WWII: 1948-1992 Variable Means By Marginal Medal Distance

	Distance -2	Distance -1	Distance 0	Distance 1	Distance 2
Future Olympics	0.5	0.684	0.636	0.687	0.723
	(0.788)	(0.913)	(0.889)	(0.926)	(0.981)
Future Medals	0.17	0.257	0.303	0.432	0.534
	(0.545)	(0.763)	(0.865)	(1)	(1.25)
Future Gold Medals	0.0532	0.0909	0.0965	0.178	0.242
	(0.303)	(0.374)	(0.402)	(0.579)	(0.717)
Age	23.6	23.8	23.7	23.6	23.6
	(4.25)	(4.31)	(4.19)	(4.26)	(4.19)
Events	1.42	1.64	1.59	1.62	1.84
	(1.02)	(1.26)	(1.34)	(1.28)	(1.51)
Team Event Dummy	0.151	0.208	0.178	0.198	0.252
	(0.358)	(0.406)	(0.383)	(0.399)	(0.434)
Male Dummy	0.822	0.744	0.793	0.768	0.753
	(0.383)	(0.436)	(0.405)	(0.422)	(0.432)
Summer Dummy	0.905	0.849	0.868	0.872	0.877
	(0.293)	(0.358)	(0.339)	(0.334)	(0.329)
Future Home Same	0.144	0.14	0.149	0.206	0.204
	(0.351)	(0.347)	(0.357)	(0.405)	(0.403)
Future Home Different	0.126	0.158	0.137	0.164	0.179
	(0.334)	(0.377)	(0.344)	(0.373)	(0.388)
Observations	1410	880	1212	1009	1047

Data for individual event athletes in debut Olympics. Marginal medal distance is taken as a maximum over all individual results for an athlete who competes in multiple events. Events refers to the total number of events an athlete competes in during their debut games. This includes team events if they also happen to compete in them. Team Event Dummy is set to one if an athlete participates in at least one team event in addition to their individual events. Future Home Same and Future Home Different count the number of Olympics in next 12 years of same (different) season hosted by the athlete's home country.

Table A3: Staggered: 1994-2018 Variable Means By Marginal Medal Distance

	Distance -2	Distance -1	Distance 0	Distance 1	Distance 2
Future Olympics	0.627	0.758	0.674	0.711	0.782
	(0.874)	(0.91)	(0.879)	(0.862)	(0.92)
Future Medals	0.21	0.318	0.306	0.427	0.562
	(1.06)	(0.888)	(0.769)	(1.1)	(1.06)
Future Gold Medals	0.0804	0.122	0.115	0.183	0.254
	(0.779)	(0.489)	(0.44)	(0.657)	(0.595)
Age	24.3	24.1	23.9	24	23.6
	(3.86)	(4.06)	(3.49)	(3.87)	(3.75)
Events	1.37	1.62	1.44	1.54	1.61
	(0.955)	(1.14)	(1.04)	(1.18)	(1.19)
Team Event Dummy	0.143	0.219	0.146	0.186	0.198
	(0.35)	(0.414)	(0.354)	(0.39)	(0.399)
Male Dummy	0.611	0.557	0.651	0.577	0.577
	(0.488)	(0.497)	(0.477)	(0.494)	(0.494)
Summer Dummy	0.868	0.791	0.847	0.85	0.822
	(0.339)	(0.407)	(0.361)	(0.357)	(0.383)
Future Home Same	0.058	0.0922	0.0683	0.0711	0.0882
	(0.234)	(0.29)	(0.252)	(0.257)	(0.284)
Future Home Different	0.0896	0.0957	0.0863	0.112	0.147
	(0.286)	(0.294)	(0.281)	(0.316)	(0.354)
Observations	982	575	834	633	646

Data for individual event athletes in debut Olympics. Marginal medal distance is taken as a maximum over all individual results for an athlete who competes in multiple events. Events refers to the total number of events an athlete competes in during their debut games. This includes team events if they also happen to compete in them. Team Event Dummy is set to one if an athlete participates in at least one team event in addition to their individual events. Future Home Same and Future Home Different count the number of Olympics in next 12 years of same (different) season hosted by the athlete's home country.