CANADIAN MASTERS OF ECONOMIC PROGRAMS: HAVE THEY CHANGED OVER THE LAST DECADE

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ABSTRACT

This paper presents the results of a survey of directors of Masters of Economics programs to determine the missions, inputs, and outcomes of these degree programs throughout the United States and Canada. The survey asks respondents to provide information on program admission requirements, curriculum, faculty characteristics, enrollment, graduation rates, student financial support, and placement. The results of degree programs in the United States are compared to those in Canada. Current characteristics of Canadian degree programs are also compared to our previous survey conducted 10 years ago. Similarities and differences between programs in the United States and Canada are highlighted.

INTRODUCTION AND BRIEF REVIEW OF THE LITERATURE

This paper first presents data from terminal economics degree programs in Canada and then compares these programs to terminal economics master's degree programs in the United States. The data are from a survey of all terminal master's programs in Canada and the United States that was conducted by Survey Monkey in 2012. We then compare the results from this survey of Canadian schools to the results of a previous survey of Canadian terminal master's programs based on a survey conducted in 2002.

The first study to look at master's of economics programs was by Barr, Aby, and Willhite in 1991. They reported the results of a survey of departments offering both Ph.D.'s and master's degrees in economics. The survey focused upon the differences in the degree structures and graduate degree placement. Another study by Thornton and Inees (1988) looked at master's degrees in economics and focused on admissions requirements, curriculum requirements, and time needed to earn a degree and graduate placement into careers and doctoral programs. As noted by McCoy and Milkman (1995) "neither of these studies attempted to ascertain significant differences in programs that may be associated with different intuitional characteristics or different program goals. (p.157)" As far as we can tell the only other research in this area has been conducted in various manuscripts by McCoy and Milkman.

McCoy and Milkman published the results of an initial survey of terminal master's programs in economics in United States universities in 1995, and the results of a second survey in 2006. Both of the studies were published in the *Journal of Economic Education*. While the study published in 1995 only included programs in the United States, the survey done for the paper published in 2006 also included Canadian universities. However the results were not presented in the paper published in 2006. Instead a separate article, "Masters in Economic Programs:

Comparing Canada and the United States" was published by the *Journal of Economic Education* in 2008.

DATA AND DESCRIPTIVE STATISTICS

The data collected in 2012 was collected through an on-line survey using Survey Monkey. All of the universities in the United States and Canada listed in Peterson's Online Guide to Graduate Programs in Economics which offered a terminal master's degree in economics were surveyed. This totaled 195 in the United States and 27 in Canada. The emails were sent out in early spring of 2012. Those who did not respond were sent a second email which also contained the survey in the late spring of 2012, and this was followed by an email survey attempt to the non-responders in the fall of 2012. In the previous surveys of Masters of Economics programs the surveys were sent out by postal mail and we asked respondents to send the completed surveys back to us. The survey is very extensive and this may be why our survey response rate is slightly below what is was in the previous surveys. This time our response rate was 33 percent for the Canada universities (compared to 45 percent in the prior survey), and for United States universities the response rate was 32 percent (compared to 37 percent in the prior survey).

There seem to be less programs that offer the terminal master's degree in economics in the United States. In the United States in 2002 we were able to identify 272 programs that offered this degree, while in the 2012 survey only 195 programs were identified. However in Canada the number of programs identified only decreased by one from 34 to 33.

Table 1 and Table 2 display the results of the surveys. Table 3 contains a list and brief description of all of the variables used in the study. The survey asked respondents information about their programs such as general program characteristics, department faculty, admission requirements, student characteristics, financial aid, curriculum, and graduation rates and placement.

THE CANADIAN AND UNITED STATES PROGRAMS

Means and standard deviations are listed for all of the variables in the 2012 survey. While there are many similarities between the programs located in Canada and the United States, this portion of the paper will focus on the differences which are statistically significant.

A higher percentage of programs in Canada are more likely to see their mission as preparing students for either doctoral work or careers. Also a higher percentage of the Canadian programs are located in the Colleges of Arts and Sciences. They also have a higher percentage of women faculty members in the department.

Programs in the United States are more likely to require a standardized entrance exam. However all of the Canadian programs require a certain undergraduate grade point average for admission, while only eighty percent of the United States programs require one. The average undergraduate grade point average for the Canadian programs is 3.16 while for United States programs it is 2.982. All of the Canadian programs also require intermediate undergraduate economics.

Table 1 A Comparison of United States and Canadian Programs								
		US			CA		US v. CA	
Variables ¹⁾	Ma	SD	N	Ma	SD	N	z	Sig. 2)
General Program Characteristics								
PHD	0.608	0.492	74	0.8	0.422	10	-1.18	
DOCWORK	0.27	0.447	63	0.1	0.316	10	1.158	
BUSGOVT	0.635	0.485	63	0.6	0.516	10	0.212	
ВОТН	0.095	0.296	63	0.3	0.483	10	-1.83	**
ARTSCI	0.466	0.502	73	0.75	0.463	8	-1.527	*
BUS	0.329	0.473	73	0.125	0.354	8	1.184	
AG	0.205	0.407	73	0.125	0.354	8	0.543	
PUBLIC	0.838	0.371	74	0.8	0.422	10	0.301	
PRIVATE	0.162	0.371	74	0.2	0.422	10	-0.301	
Departmental Faculty								
FULFAC	19.438	10.828	73	22.1	6.523	10	-1.099	
WOMFAC	18.954	13.976	62	26.292	9.457	7	-1.839	**
MINFAC	11.006	16.286	62	12.222	9.493	5	-0.258	
Admission Requirements								
ENTREXAM	0.75	0.436	64	0.1	0.316	10	4.042	***
MINIMUM	0.449	0.503	49	1	-	1	-1.094	
MINUGPA	0.794	0.408	63	1	0	10	-1.584	*
REQGPA	2.982	0.203	51	3.16	0.201	10	-2.55	***
RCRSWRK	0.875	0.333	64	1	0	10	-1.184	
PRINCECO	0.614	0.491	57	0.8	0.422	10	-1.131	
INTERECO	0.807	0.398	57	1	0	10	-1.52	*
ONECALC	0.702	0.462	57	0.7	0.483	10	0.011	
STATS	0.842	0.368	57	0.8	0.422	10	0.332	
QUANT	0.842	0.368	57	0.9	0.316	10	-0.474	
REQTOEFL	0.984	0.126	63	1	0	10	-0.401	
Student Characteristics								
FTENROLL	26.686	36.343	51	27.4	12.501	10	-0.111	
PARTROLL	11.955	45.291	44	1.571	1.618	7	1.515	*
WOMEN	35.774	20.753	44	44.4	24.228	8	-0.946	
AFRIAMER	5.734	10.058	41	1.214	2.087	8	2.604	***
HISPAMER	3.709	8.024	37	0	0	8	2.812	***
FOREIGN	38.135	26.748	42	49.374	29.044	10	-1.116	
UNDGRAD	17.748	18.037	38	32.539	59.885	10	-0.772	
UNDECON	57.452	35.114	39	78.018	31.518	10	-1.797	**
DIRECT	55.202	34.723	39	74.696	19.108	10	-2.374	***
GRADTRAN	11.412	14.495	39	4	8.966	10	2.023	**

Table 1 A Comparison of United States and Canadian Programs								
		US			CA	US v. CA		
Variables ¹⁾	Ma	SD	N	Ma	SD	N	Z	Sig. 2)
WRKFRC	27.858	23.542	37	14.984	11.461	9	2.367	***
IN25MI	0.173	0.382	52	0	0	10	1.423	*
IN300MI	0.288	0.457	52	0.4	0.516	10	-0.701	
OUT300MI	0.538	0.503	52	0.6	0.516	10	-0.358	
Financial Aid	İ							
TASSIST	0.561	0.501	57	1	0	10	-2.645	***
PTASSIST	19.602	29.98	49	85.5	16.236	10	-9.856	***
DSTIP-T 3)	9812.96	4061.485	25	10179.662	5149.427	10	-0.202	
RASSIST	0.632	0.487	57	0.5	0.527	10	0.788	
PRASSIST	28.49	35.394	52	16.25	31.075	10	1.114	
DSTIP-R 3)	9214.514	4268.247	37	8442.927	8158.127	6	0.227	
FELSCHOL	0.474	0.504	57	1	0	10	-3.087	***
DSTIP-F ³⁾	6825	5534.618	11	9404.25	4970.616	8	-1.064	
OTHERAID	0.123	0.331	57	0	0	10	1.171	
NEEDBASE	0.175	0.384	57	0.1	0.316	10	0.594	
MINFAID	0.644	0.483	59	0.7	0.483	10	-0.343	
Curriculum	İ							
RGRDHRS	32.617	7.258	47	28.125	7.68	8	1.541	*
FULLTIME	18.66	6.098	47	15	6.7	10	1.593	*
RMICRO	3.766	1.577	47	3.6	1.265	10	0.36	
RMACRO	3.283	1.515	46	3	1.414	10	0.565	
REMETRIC	4.826	3.282	46	3	2	10	2.293	**
RMATHECO	1.914	1.616	35	0	0	8	7.01	***
RSTAT	1.324	1.934	34	0	0	8	3.99	***
REQSPEC	0.277	0.452	47	0.1	0.316	10	1.178	
SPECOPT	0.419	0.499	43	0.3	0.483	10	0.691	
REQTHES	0.383	0.491	47	0.4	0.516	10	-0.1	
COMPEXAM	0.34	0.479	47	0.1	0.316	10	1.509	*
WRITEXAM	0.778	0.428	18	1	-	1	-0.531	
ORALEXAM	0.222	0.428	18	0	-	1	0.531	
Graduation Rates and Placement								
NUMBER	15.447	23.737	47	18.5	11.54	10	-0.607	
COMPLETE	83.643	12.435	42	90.9	8.319	10	-2.229	**
DOCTI	9.15	15.501	40	10.111	9.752	9	-0.236	
DOCT2	13.205	12.689	39	13.1	9.024	10	0.03	
DOCT3	3.441	3.94	34	1.429	2.44	7	1.76	**
GOVT	20.611	11.729	36	34.8	15.648	10	-2.667	***

Table 1 A Comparison of United States and Canadian Programs									
	US			CA			US v. CA		
Variables ¹⁾	Ma	SD	N	Ma	SD	N	z	Sig. 2)	
PRIVSECT	49.649	25.044	37	35.4	17.315	10	2.08	**	
POSTSEC	5.724	13.943	29	4.333	10.614	6	0.276		

Notes:

- 1) Variables are described in Table 3.
- 2) Statistical Significance * Alpha = 0.1 ** Alpha = 0.05 *** Alpha = 0.01
- 3) Figures are in US\$

United States programs have a much higher percentage of part-time students than Canadian programs, and they have more African American and Hispanic Students. Canadian programs have significantly more students that completed an economics undergraduate major. The Canadian programs also have a higher percentage of students that entered their Masters of Economics program directly after completion of their undergraduate degree. United States programs have a higher percentage of students who transfer from another graduate program and a higher percentage of students that entered the program from the work force. Also, seventeen percent of the students in the United States programs lived within twenty-five miles prior to entering the Masters of Economics program.

All of the Canadian universities offer teaching assistantships to students in their terminal master's program, while in the United States only 56% of the programs offer this type of financial support. Over 85% of Canadian students receive teaching assistantships and in the United States less than 20% of the students in the terminal Masters of Economics programs receive teaching assistantships. All of the Canadian schools also award fellowships and scholarships to students in their programs.

The number of months it takes the typical full time student to graduate from the program is 18.66 in the United States while it is only 15 months in the Canadian programs. This may be because the Canadian programs have entering students who may be better prepared to study economics. United States programs seem to be more quantitative. The average United States program requires students to take more econometrics. None of the Canadian programs require a course in either mathematical economics or statistics. United States programs are also more likely to require a comprehensive exam. Another reason why the United States program may take longer to complete is that the average United States program has a higher credit hour requirement than the average credit hour requirement in the Canadian programs.

Almost 91% of the students in Canada complete the terminal masters of economics degree while in the United States the percentage of degree completers is 83.6%. A higher percentage of the students in Canada enter careers in government (almost 35%) after they finish their terminal Master's degree in Economics. However in the United States more students enter jobs in the private sector (almost 50%). Both the United States and Canadian programs prepare a substantial number of students for doctoral programs in economics.

Many of the differences and similarities are similar to findings in the Milkman and McCoy (2008) paper. This we believe is due to stability in the Canadian programs.

CHANGES IN THE LAST DECADE IN CANADIAN M.S. ECONOMICS PROGRAMS

Table 2 contains the means and standard deviations for the Canadian programs that responded to our surveys in 2002 and 2012. As noted above the Canadian programs have remained relatively stable, however we will highlight the statistically significant changes in the Canadian programs over the last decade.

The Canadian programs are more likely to place more emphasis on preparing students for doctoral work and preparation for careers than they did a decade ago. This may be in response to student desires since a higher percentage of the programs' graduates now take jobs in the private sector. In the 2002 survey all of the universities who responded to our survey were public institutions. In the 2012 survey 20% of the schools responding were private universities.

In the 2012 survey all of the universities responding required a minimum grade point average, while in the previous survey less than 83% had this requirement for admission. Also, while fewer universities require applicants to have a course in statistics today, they are more likely to require quantitative courses. Requiring more quantitative courses is also true of programs in the United States and this may reflect the trend of the economics profession becoming more and more mathematical.

The average number of students in each program has increased dramatically from 17.0 to 27.4 in the Canadian programs. This same trend has occurred in the United States. A greater percentage of the students in the Canadian masters programs are undergraduate economics majors. (78.01% in the 2012 survey vs. 59.86% in the 2002 survey). Fewer of the students in the Canadian programs are from public comprehensive universities.

The 2012 survey shows that a much greater percentage of students are receiving teaching assistantships than in 2002, and that the average stipend for the teaching assistantship has increased from \$5,272 to \$10.118. (The 2002 dollars have been adjusted for inflation.)

The percentage of students receiving research assistantships has declined over the decade, but the stipend for fellowships and scholarships has increased. The percentage of universities offering minority specific financial aid has also increased.

None of the universities in the 2012 survey required a class in mathematical economics. This may be attributed to the increasing percentages of universities that required more quantitative classes for admission. Also, fewer of the programs now require a thesis.

The percentage of students going into a doctoral program in a discipline other than economics has declined. A much greater percentage of students are now taking jobs in the private sector after they complete their master's program in economics.

In conclusion, this research has highlighted both the similarities and differences between the Canadian and United States universities terminal master's degrees in economics. It has also has illustrated the changes that Canadian universities terminal master's programs have experienced over the decade. Our hope is that information will be useful to directors of programs in both countries as they work to improve their programs.

DIRECT

Table 2 A Comparison of Canadian Programs										
	C	CA 2012			CA 2002			2012 v. 2002		
Variable ¹⁾	Ma	SD	N	Ma	SD	N	z	Sig. 2)		
General Program Characteristics										
PHD	0.8	0.422	10	0.619	0.498	21	1.008			
DOCWORK	0.1	0.316	10	0.227	0.429	22	-0.855			
BUSGOVT	0.6	0.516	10	0.727	0.456	22	-0.72			
ВОТН	0.3	0.483	10	0.045	0.213	22	2.018	**		
ARTSCI	0.75	0.463	8	0.826	0.388	23	-0.469			
BUS	0.125	0.354	8	0.043	0.209	23	0.808			
AG	0.125	0.354	8	0.13	0.344	23	-0.039			
PUBLIC	0.8	0.422	10	1	0	24	-2.258	**		
PRIVATE	0.2	0.422	10	0	0	24	2.258	**		
Departmental faculty										
FULFAC	22.1	6.523	10	19.75	11.299	24	0.759			
WOMFAC	26.292	9.457	7	18.231	33.824	15	0.854			
MINFAC	12.222	9.493	5	24.383	33.441	15	-1.264			
Admission Requirements										
ENTREXAM	0.1	0.316	10	0.13	0.344	23	-0.246			
MINIMUM	1	N/A	1	1	0.344	23	N/A			
MINUGPA	1	0	10	0.826	0.388	23	1.407	*		
REQGPA	3.16	0.201	10	3.164	0.284	17	-0.038			
RCRSWRK	1	0	10	0.957	0.209	23	0.67			
PRINCECO	0.8	0.422	10	0.682	0.477	22	0.689			
INTERECO	1	0	10	0.955	0.213	22	0.685			
ONECALC	0.7	0.483	10	0.636	0.492	22	0.351			
STATS	0.8	0.422	10	0.955	0.213	22	-1.39	*		
QUANT	0.9	0.316	10	0.565	0.507	23	1.875	**		
REQTOEFL	1	0	10	0.913	0.288	23	0.962			
Student Characteristics										
FTENROLL	27.4	12.501	10	17.043	12.9	23	2.166	**		
PARTROLL	1.571	1.618	7	3.733	6.787	15	-1.165			
WOMEN	44.4	24.228	8	39.214	13.068	22	0.576			
AFRIAMER	1.214	2.087	8							
HISPAMER	0	0	8							
FOREIGN	49.374	29.044	10	38.504	20.215	22	1.071			
UNDGRAD	32.539	59.885	10	25.991	21.387	21	0.336			
UNDECON	78.018	31.518	10	59.86	40.643	17	1.295	*		

19.108

10

74.696

77.472

121.54 22

-0.104

Table 2 A Comparison of Canadian Programs								
GRADTRAN	4	8.966	10	3.136	8.703	19	0.249	
WRKFRC	14.984	11.461	9					
IN25MI	0	0	10	0	0	22	N/A	
IN300MI	0.4	0.516	10	0.455	0.51	22	-0.288	
OUT300MI	0.6	0.516	10	0.545	0.51	22	0.288	
Financial Aid								
TASSIST	1	0	10	0.958	0.204	24	0.655	
PTASSIST	85.5	16.236	10	56.452	27.756	21	3.658	***
DSTIP-T 3)	10179.662	5149.427	10	5732.99	3214.686	15	2.433	***
RASSIST	0.5	0.527	10	0.875	0.338	24	-2.349	***
PRASSIST	16.25	31.075	10	34.167	31.311	18	-1.458	*
DSTIP-R ³⁾	8442.927	8158.127	6	5270.562	3160.764	21	0.933	
FELSCHOL	1	0	10	0.913	0.288	23	0.962	
DSTIP-F ³⁾	9404.25	4970.616	8	5182.77	3041.426	17	2.215	**
OTHERAID	0	0	10	1	0	2	-3.464	***
NEEDBASE	0.1	0.316	10	0.261	0.449	23	-1.039	
MINFAID	0.7	0.483	10	0.13	0.344	23	3.272	***
Curriculum								
RGRDHRS	28.125	7.68	8	24.947	9.704	19	0.905	
FULLTIME	15	6.7	10	15.959	6.726	22	-0.375	
RMICRO	3.6	1.265	10	3.4	1.353	20	0.399	
RMACRO	3	1.414	10	2.789	1.032	19	0.416	
REMETRIC	3	2	10	3.5	1.762	20	-0.671	
RMATHECO	0	0	8	2.286	1.604	7	-3.771	***
RSTAT	0	0	8	0.6	1.342	5	-1	
REQSPEC	0.1	0.316	10	0.087	0.288	23	0.12	
SPECOPT	0.3	0.483	10	0.217	0.422	23	0.509	
REQTHES	0.4	0.516	10	0.913	0.288	23	-3.161	***
COMPEXAM	0.1	0.316	10	0.087	0.288	23	0.12	
WRITEXAM	1	N/A	1	1	0	2	N/A	
ORALEXAM	0	N/A	1	1	0	2	-1.732	**
Graduation Rates and Placement								
NUMBER	18.5	11.54	10	10	7.403	21	2.13	**
COMPLETE	90.9	8.319	10	84.316	10.945	19	1.81	**
DOCTI	10.111	9.752	9	17.143	22.25	14	-1.038	
DOCT2	13.1	9.024	10	18.571	17.805	14	-0.986	
DOCT3	1.429	2.44	7	5	9.405	14	-1.334	*
GOVT	34.8	15.648	10	37.143	17.944	14	-0.34	

Table 2 A Comparison of Canadian Programs								
PRIVSECT	35.4	17.315	10	20.714	21.2	14	1.864	**
POSTSEC	4.333	10.614	6	1.429	3.056	14	0.659	

- Notes: 1) Variables are described in Table 3.
- ** Alpha = 0.05 *** Alpha = 0.01
- 2) Statistical Significance * Alpha = 0.13) 2002 figures are adjusted for inflation

Table 3 LIST OF VARIABLES				
Variable	Description	Туре		
General Progr	am Characteristics	,		
PHD	Ph.D. offered in your department?	Binary		
DOCWORK	Prep for doctoral work is primary mission?	Binary		
BUSGOVT	Prep for careers (bus. & gov.) is primary mission?	Binary		
BOTH	Prep for doctoral work and careers are primary missions	Binary		
	Administratively located in:			
ARTSCI	Arts and Sciences	Binary		
BUS	Business	Binary		
AG	Agriculture	Binary		
PUBLIC	Public institution	Binary		
PRIVATE	Private institution	Binary		
Departmental	Faculty	-		
FULFAC	Number of full-time faculty	Continuous		
WOMFAC	Percentage of women faculty in department	Continuous		
MINFAC	Percentage of minority faculty in department	Continuous		
Admission Red	quirements	•		
ENTREXAM	Standardized entrance exam required?	Binary		
MINIMUM	Required minimum score on entrance exam (if exam required)?	Binary		
MINUGPA	Required minimum undergraduate GPA?	Binary		
REQGPA	If required, what is the minimum GPA?	Continuous		
RCRSWRK	Specific coursework required?	Binary		
	If yes, is			
PRINCECO	principles of economics required?	Binary		
INTERECO	intermediate economics required?	Binary		
ONECALC	at least one calculus course required?	Binary		
STATS	statistics required?	Binary		
QUANT	Mathematical admission requirements?	Binary		
REQTOEFL	Is TOEFL required?	Binary		
Student Chara	acteristics			
FTENROLL	Number of full-time students enrolled in program	Continuous		

PARTROLL	Number of part-time students enrolled in program	Continuous
	Percentage of students who	
WOMEN	are women	Continuous
AFRIAMER	are African American	Continuous
HISPAMER	are Hispanic American	Continuous
FOREIGN	are foreign	Continuous
UNDGRAD	received undergraduate degrees at the same institution	Continuous
UNDECON	were undergraduate economics majors	Continuous
DIRECT	entered the program directly upon completion of bachelor's	Continuous
GRADTRAN	transferred from a graduate program	Continuous
WRKFRC	entered the program from the work force	Continuous
IN25MI	Majority of students drawn within 25 miles?	Binary
IN300MI	Majority of students drawn within 300 miles?	Binary
OUT300MI	Majority of students drawn from over 300 miles?	Binary
Financial Aid		1
TASSIST	Teaching assistantships available to terminal master's students?	Binary
PTASSIST	Percentage of students in this program who receive TA's?	Continuous
DSTIP-T ²⁾	Stipend of TA's	Continuous
RASSIST	Research assistantships available to terminal master's students?	Binary
PRASSIST	Percentage of students in this program who receive RA's?	Continuous
DSTIP-R 2)	Stipend of RA's	Continuous
FELSCHOL	Fellowships or scholarships available to terminal master's students?	Binary
DSTIP-F ²⁾	Stipend of Fellowships/Scholarships	Continuous
OTHERAID	Other financial aid available?	Binary
NEEDBASE	Any need-based financial aid?	Binary
MINFAID	Any minority specific financial aid?	Binary
Curriculum		
RGRDHRS	Required semester hours for master's	Continuous
FULLTIME	Number of months typically taken by full-time students to graduate	Continuous
	Number of graduate semester hours required in	
RMICRO	micro theory	Continuous
RMACRO	macro theory	Continuous
REMETRIC	econometrics	Continuous
RMATHECO	mathematical economics	Continuous
RSTAT	statistics	Continuous
REQSPEC	Is there a specialty field requirement?	Binary
SPECOPT	Is there a specialty field option?	Binary
REQTHES	Is a master's thesis required?	Binary
COMPEXAM	Comprehensive exam required?	Binary
WRITEXAM	If yes, is it written?	Binary
ORALEXAM	If yes, is it oral?	Binary
Graduation Ra	ites and Placement	
NUMBER	How many Masters degree in this degree program are typically awarded each year?	Continuous

COMPLETE	Percentage of students who complete the program	Continuous
	Percentage of terminal master's students who upon completion begin	
DOCTI	a doctoral program in economics at same university	Continuous
DOCT2	a doctoral program in economics at another university	Continuous
DOCT3	a doctoral program in some other discipline	Continuous
GOVT	careers in government	Continuous
PRIVSECT	careers in the private sector	Continuous
POSTSEC	careers in Post-Secondary teaching	Continuous

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