December 9, 2019

To Whom it May Concern,

My name is Michael Boutros and I am a fourth year PhD student at Duke University. Enclosed is my application to attend the 2020 NBER Behavioral Macro Bootcamp on March 12, 2010, in Cambridge, MA. Professor Francesco Bianchi emailed a reference letter to Ms. Elisa Pepe on December 3, 2019.

I have included my CV, full academic transcript of PhD courses at Duke, and a short motivation for why I hope to attend this bootcamp.

I look forward to hearing from you in January 2020.

Sincerely,

Michael Boutros

September 2019

Michael Boutros

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Email: michael.boutros@gmail.com
Website: http://www.michaelboutros.com

Education

2016 – present	Ph.D. in Economics, Duke University
2019	M.A. in Economics, Duke University
2015	B.Sc. in Financial Economics, *High Distinction*, University of Toronto

Research Areas

Macroeconomics, Household Finance, Monetary Policy.

Publications

1. "Monetary Policy Implementation in a Negative Rate Environment" with Jonathan Witmer. *Journal of Money, Credit & Banking*, Forthcoming.

   Bank of Canada Working Paper 2017-25, July 2017. Presented at ECB Workshop on money markets, monetary policy implementation and central bank balance sheets, Frankfurt, Germany, Nov. 6 7, 2017.

   Abstract: Monetary policy implementation could, in theory, be constrained by deeply negative rates since overnight market participants may have an incentive to invest in cash rather than lend to other participants. To understand the functioning of overnight markets in such an environment, we add the option to exchange central bank reserves for cash to the standard workhorse model of monetary policy implementation (Poole 1968). Importantly, we show that monetary policy is not constrained when just the deposit rate is below the yield on cash. However, it could be constrained when the target overnight rate is below the yield on cash. At this point, the overnight rate equals the yield on cash instead of the target rate. Modifications to the implementation framework, such as a tiered remuneration of central bank deposits contingent on cash withdrawals, can work to restore the implementation of monetary policy such that the overnight rate equals the target rate.

Working Papers

2. "The Persistence of Miscalibration" with John R. Graham, Campbell R. Harvey, John Payne, and Zahi Ben-David. September 2019.

   Abstract: Using 14,800 forecasts of one-year S&P 500 returns made by Chief Financial Officers over a 12-year period, we track the individual executives who provide multiple forecasts to evaluate how they adapt and recalibrate in response to return realizations. We present a simple model of Bayesian learning which suggests that the evolution of beliefs should be impacted by return realizations, but that stronger priors yield a sluggish response. While CFOs' forecasts are unbiased, their confidence intervals are far too narrow, implying a very strong conviction in their beliefs. Consistent with Bayesian learning, we find that when return realizations fall outside of ex-ante confidence intervals, CFOs' subsequent confidence intervals become significantly wider. However, the magnitude of the updating is apparently dampened by the tightness of prior beliefs and, as a result, miscalibration persists.

3. "Household Finances and Fiscal Stimulus in 2008." June 2019.

   Abstract: Using detailed household-level data from the Survey of Income and Program Participation, the ratio of credit card debt to income is found to be the most important balance sheet item in determining household usage of stimulus funds in 2008, adding to existing evidence that borrowing constraints are functions of debt-to-income ratios. Borrowing constrained households, often predicted to be the group with the largest propensity to consume out of stimulus funds, were the most likely to use stimulus payments to repay debt instead of increase consumption. This behavior is consistent with the fact that household credit supply was tightening at the same time that stimulus payments were being distributed, forcing households, especially those near their borrowing constraints, to deleverage.

4. "The Information Effect of Monetary Policy." December 2018.

   Abstract: A large empirical literature documents that central bank monetary policy changes signal information about future economic fundamentals to the private sector. The canonical Gali (2008) model is modified to analyze this mechanism and understand the information effect of monetary policy. We assume the central bank observes a private signal of future economic fundamentals and uses the filtered information in its Taylor rule. As a result, the nominal interest rate serves an additional function as a noisy signal of future economic fundamentals and there is an information effect of monetary policy. We find that a contractionary monetary policy induces an expansionary information effect, but for reasonable calibrations, the net effect is contractionary.

Research Employment

2017 –	Research Assistant for Prof. Francesco Bianchi
2018	Summer Dissertation Intern, Bank of Canada
2018	Research Assistant for Prof. Campbell Harvey
2015 – 2016	Research Assistant, Bank of Canada
2015 – 2016	Research Assistant for Prof. Daniel Chen
2014 – 2016	Research Assistant for Prof. Michelle Alexopoulos
2014 – 2016	Research Assistant for Prof. Yosh Halberstam

Teaching Employment

2017 – 2018	Teaching Assistant, Duke University
2013 – 2015	Teaching Assistant, University of Toronto

Name: **Michael Boutros** **12/9/2019**
Student ID: **2345166**

Degrees Awarded

Degree: **Master of Arts**
Confer Date: **09/01/2019**
Plan: **Economics - Master's**

Academic Program History

Program: **Grad - PhD A&S**
(*Status: Active in Program*)
Plan: **Economics - PhD** *(Primary)*
Subplan: **Macroeconomics** *Specialization*

Program: **Grad - Certificate Programs**
(*Status: Active in Program*)
Plan: **Certificate in College Teaching** *(Certificate)*

Program: **Grad - Masters A&S**
(*Status: Completed Program*)
Plan: **Economics - Master's** *(Primary)*

Beginning of Graduate Record

2016 Fall Term

Course		Description	Units Earned	Official Grade	Grading Basis
CTN	1	CONTINUATION	0.000		NOG
ECON	701D	MICROECONOMIC ANALYSIS I	3.000	B+	GRD
ECON	702D	MACROECONOMIC ANALYSIS I	3.000	B+	GRD
ECON	703D	ECONOMETRICS I	3.000	B+	GRD
ECON	704	1ST YEAR INTRO TO RESEARCH	3.000	A	GRD
GS	710	RESPON CONDUCT RSRCH-CAMPUS	6.000	CR	CNC

Term GPA: 3.475 Term Earned: 18.000

Cum GPA: 3.475 Cum Earned: 18.000

2017 Spring Term

Course		Description	Units Earned	Official Grade	Grading Basis
CTN	1	CONTINUATION	0.000		NOG
ECON	704	1ST YEAR INTRO TO RESEARCH	3.000	A	GRD
ECON	705D	MICROECONOMIC ANALYSIS II	3.000	B	GRD
ECON	706D	MACROECONOMIC ANALYSIS II	3.000	B+	GRD
ECON	707D	ECONOMETRICS II	3.000	B+	GRD

Term GPA: 3.400 Term Earned: 12.000

Cum GPA: 3.437 Cum Earned: 30.000

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Name: **Michael Boutros** **12/9/2019**
Student ID: **2345166**

2017 Summer Term 1

Course		Description	Units Earned	Official Grade	Grading Basis
CTN	1	CONTINUATION	0.000		NOG

Term GPA: 0.000 Term Earned: 0.000

Cum GPA: 3.437 Cum Earned: 30.000

2017 Summer Term 2

Course		Description	Units Earned	Official Grade	Grading Basis
ECON	890	SPECIAL TOPICS IN ECONOMICS	1.500	A	GRD
Course Topic:		**STATA**			
ECON	890	SPECIAL TOPICS IN ECONOMICS	1.500	A	GRD
Course Topic:		**R PROGRAMMING**			

Term GPA: 4.000 Term Earned: 3.000

Cum GPA: 3.500 Cum Earned: 33.000

2017 Fall Term

Course		Description	Units Earned	Official Grade	Grading Basis
CTN	1	CONTINUATION	0.000		NOG
ECON	801	WRITING/PRESENTING IN ECON	1.500	A	GRD
ECON	881	TOPICS IN APPLIED MICROECON	1.500	A	GRD
Course Topic:		**R&D, PRODUCTIVITY & TECH. CHNG**			
ECON	882	TOPICS MACRO/INTERNATL FINANCE	1.500	A+	GRD
ECON	882	TOPICS MACRO/INTERNATL FINANCE	1.500	A	GRD
Course Topic:		**EMPIRICAL MACROECONOMICS**			
ECON	885	TOPICS IN ECONOMIC THEORY	1.500	A-	GRD
INCH_BUS	899	SEMINAR	1.500	A	GRD
INCH_ECO	820	MONETARY THEORY	3.000	A	GRD

Term GPA: 3.962 Term Earned: 12.000

Cum GPA: 3.642 Cum Earned: 45.000

2018 Spring Term

Course		Description	Units Earned	Official Grade	Grading Basis
CTN	1	CONTINUATION	0.000		NOG
ECON	801	WRITING/PRESENTING IN ECON	1.500	A	GRD
ECON	882	TOPICS MACRO/INTERNATL FINANCE	1.500	A	GRD
Course Topic:		**EXPECTATIONS & MACROECONOMICS**			
ECON	882	TOPICS MACRO/INTERNATL FINANCE	1.500	A	GRD
Course Topic:		**OPTIMAL FISCAL POLICY**			
ECON	883	TOPICS IN ECONOMETRICS	1.500	A	GRD
Course Topic:		**CONTINUOUS TIME FINANCE**			
GS	712	CONDUCT IN RSRCH: DEPT FORUM	2.000	CR	CNC
INCH_ECO	861	INTL MONETARY ECON	0.000	W	W/D

Term GPA: 4.000 Term Earned: 8.000

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Name: **Michael Boutros** **12/9/2019**
Student ID: **2345166**

Cum GPA: 3.690 Cum Earned: 53.000

2018 Summer Term 1

Course		Description	Units Earned	Official Grade	Grading Basis
CTN	1	CONTINUATION	0.000		NOG

Term GPA: 0.000 Term Earned: 0.000

Cum GPA: 3.690 Cum Earned: 53.000

2018 Fall Term

Course		Description	Units Earned	Official Grade	Grading Basis
CTN	1	CONTINUATION	0.000		NOG
ECON	801	WRITING/PRESENTING IN ECON	1.500	A	GRD
ECON	890S	SPECIAL TOPICS IN ECONOMICS	3.000	A	GRD
ECON	902	MACRO/INTERNATIONAL ECON WKSHP	3.000	CR	CNC
ECON	952S	MACRO INTERNATIONAL FIN RSRCH	1.500	CR	CNC
GS	712	CONDUCT IN RSRCH: DEPT FORUM	0.000	-	NOG

Term GPA: 4.000 Term Earned: 9.000

Cum GPA: 3.718 Cum Earned: 62.000

2019 Spring Term

Course		Description	Units Earned	Official Grade	Grading Basis
CTN	1	CONTINUATION	0.000		NOG
ECON	882	TOPICS MACRO/INTERNATL FINANCE	1.500	A	GRD
Course Topic:		**ASSET PRICES AND THE MACROECO**			
ECON	902	MACRO/INTERNATIONAL ECON WKSHP	3.000	CR	CNC
ECON	952S	MACRO INTERNATIONAL FIN RSRCH	1.500	CR	CNC
GS	712	CONDUCT IN RSRCH: DEPT FORUM	0.000	-	NOG

Term GPA: 4.000 Term Earned: 6.000

Cum GPA: 3.726 Cum Earned: 68.000

2019 Summer Term 1

Course		Description	Units Earned	Official Grade	Grading Basis
CTN	1	CONTINUATION	0.000		NOG

Term GPA: 0.000 Term Earned: 0.000

Cum GPA: 3.726 Cum Earned: 68.000

2019 Fall Term

Course		Description	Units Earned	Official Grade	Grading Basis
CTN	1	CONTINUATION	0.000		NOG
ECON	902	MACRO/INTERNATIONAL ECON WKSHP	0.000		CNC
ECON	952S	MACRO INTERNATIONAL FIN RSRCH	0.000		CNC

UNOFFICIAL TRANSCRIPT

Name: **Michael Boutros** **12/9/2019**
Student ID: **2345166**

Term GPA: 0.000 Term Earned: 0.000

Cum GPA: 3.726 Cum Earned: 68.000

2020 Spring Term

Course		Description	Units Earned	Official Grade	Grading Basis
CTN	1	CONTINUATION	0.000		NOG
ECON	902	MACRO/INTERNATIONAL ECON WKSHP	0.000		CNC
ECON	952S	MACRO INTERNATIONAL FIN RSRCH	0.000		CNC

Term GPA: 0.000 Term Earned: 0.000

Cum GPA: 3.726 Cum Earned: 68.000

Graduate Career Earned

Cum GPA: 3.726 Cum Earned: 68.000

Non-Course Milestones

Program: *Grad - Masters A&S*
Preliminary Exam
Milestone Status: Completed
Date Completed: 04/16/2019
Date Attempted: 04/16/2019 Completed Exam Taken

Program: *Grad - PhD A&S*
Preliminary Exam
Milestone Status: Completed
Date Completed: 04/16/2019
Date Attempted: 04/16/2019 Completed Exam Taken

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Motivation for Attending

My primary research areas are in macroeconomics and household finance, and I aim to understand the relation between household consumption decisions and their wealth.

Most macroeconomic models incorporate some form of the permanent income hypothesis, thus linking the marginal propensity to consume to whether or not the household has access to financial markets. My research adds to this large literature by seeking to further understand which households have high marginal propensities to consume, and why, by understanding the relation between individual balance sheet items and marginal behavior.

However, in even the most robust and well-cited regressions of household consumption behavior on household balance sheets, the explanatory power of wealth is low. At the same time, more research is being done in behavioral macroeconomics and modeling households who are not perfectly rational. For example, Chen Lian, a PhD candidate at MIT, has shown that, consistent with the data, households who pay less attention to their wealth have lower MPCs out of wealth.

I hope to attend this bootcamp to immerse myself in behavioral macroeconomics and understand the layout of the literature. I have read several papers in the field but have lacked the structured approach that this bootcamp would provide. Further, there is no substitute for listening to world-class researchers discuss their own work, and hearing about behavioral macroeconomics from leading scholars in the field would be invaluable.

I have an additional motive for wanting to attend this conference. The macroeconomics cohort at Duke University is fairly small, and the overlap between my and my classmates' research interests is very small. I am hoping to expand my network and meet likeminded individuals from other institutions.

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This letter is about Michael Boutros, a Ph.D. student in the Economics Department at Duke University. I am Michael's main adviser.

Let me say upfront that I strongly recommend Michael for the Behavioral Research Boot Camp. Michael is one of the most promising students whom I have worked with at Duke University. I had an excellent opinion of Michael since the beginning of his graduate studies, but his profile has been growing stronger. I expect him to be successful on the academic market next year. This is why I think that his efforts should be rewarded.

I have been interacting with Michael from before he joined Duke. While he was still deciding where to pursue his advanced studies, we exchanged emails. I was very impressed with his CV and his background. Therefore, I was very enthusiastic about the idea of having him coming to Duke for his Ph.D. studies. Michael worked at the Bank of Canada before starting his Ph.D. at Duke. Over the years, I came to realize that this kind of working experience is generally predictive of future success at the graduate level, especially in macro. Furthermore, Michael's research interests are similar to mine and he has started working with me as both a research assistant and a teaching assistant. He has done a great work across all dimensions. He is very motivated and works hard. Students like him because he always finds a way to explain complicated subjects in an intuitive way.

Michael is currently a fourth-year Ph.D. student. He has taken my second-year macro course covering an introduction to Bayesian econometrics and some applications. Michael mastered the topics that I covered in that course. He is very receptive and he asks very good questions. Intellectual curiosity and the ability to see through models are clearly two of Michael's strengths. What I find particularly promising is Michael's ability to map the topics that we cover in class into interesting research questions.

Many fourth-year students are still unsure about what they want to work on in their thesis. Instead, Michael has already identified the topics that are the most interesting to him. Michael is working in two distinct areas: Effects of fiscal policy in model with heterogeneous agents and information content of

monetary policy. Michael's job market paper will focus on the role of agents' heterogeneity in the propagation of fiscal shocks, building on recent contributions by Violante, Kaplan, and co-authors. The project is very ambitious and at an advanced stage. I expect that the final paper will be very strong.

Michael can become a very successful economist. The boot camp would allow him to acquire new tools and interact with leaders in the field. I strongly recommend with no hesitation.

Best regards,



Francesco Bianchi
Associate Professor of Economics
Duke University
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