

Maximizing Application Utility: A Guide for BYU Undergraduates in Preparation for Graduate Work in Economics

Submitted to BYU Department of Economics

June 2008

Table of Contents

Preface	iii
I. Is Graduate School for Me? A Look at the Nature and Rigor of Graduate Work in Economics	1
Background Information	1
A Word of Caution: Reasons Why Graduate Work May Not Be For You	1
Good Indicators: Signs That You Might Be Well Suited For Graduate Studies	2
A Litmus Test: Some Ways to Help You Decide.....	3
II. So You Want to Get a PhD? Preparing for Graduate School.....	4
Overview	4
Academic Coursework	4
Economics Classes.....	4
Math Classes	4
Other Classes	5
Timing.....	6
Getting to Know the Faculty	7
Excelling in Classes	8
Attending Lectures.....	8
Other Outlets.....	8
Teaching/Research Assistant Experience.....	9
Teaching Assistant	9
Research Assistant	9
III. The Application Process	11
Choosing Schools to Apply to	11
External Funding	12
GRE Preparation and Performance	13
Letters of Recommendation	13
Writing Personal Statements	14
Completing the Application	14
IV. Conclusion.....	15
Summary	15
V. Appendices	16
Appendix A: US World News and Report Rankings of Top 25 US Graduate Programs in Economics, 2005	16
Appendix B: Selected Applicant Profiles from 2002-2004.....	17
Appendix C: Additional Resources	18

Preface

This manual is designed to be a reference guide and a starting point for a BYU student's exploration into graduate work in economics. The purpose of this manual is to help BYU economics students to be more aware of what preparation is required for potential graduate students. This manual marks the first written compilation of a wealth of knowledge at BYU regarding graduate work in economics, thus making the information more accessible to BYU students. The manual is designed to be a reference guide for specific questions regarding graduate work, but can also be read straight through for an overview of all aspects pertaining to graduate work. There are three primary sections: deciding on the suitability of graduate school for individual students, preparing for graduate work, and applying for graduate school.

I. Is Graduate School for Me? A Look at the Nature and Rigor of Graduate Work in Economics

Background Information

The following is taken directly from the Department website's frequently asked questions section on graduate work in economics (<http://econ.byu.edu>):

Graduate work in economics almost always means pursuing a Ph.D. Almost everybody applies for admission to a Ph.D. program while they are an undergraduate. In some programs, you can get your Master's degree when you complete the doctoral coursework, but frankly, it doesn't really mean anything to most people.

Typical programs involve two years of course work, followed by a dissertation. The total time to completion (course work and dissertation) is usually four or five years. Most graduate students are involved in either teaching or research assistantships, although some programs allow you to concentrate exclusively on course work for the first year or two.

Graduate work in economics is a combination of math, computer programming, statistics, and of course, economics. Not only is there a strong coursework component, but as mentioned above, there is an overwhelming emphasis on research. Teaching may also be part of graduate work, but by and large, the focus is on doing independent research in economic topics.

A Word of Caution: Reasons Why Graduate Work May Not Be For You

Graduate work in economics is a very challenging endeavor, and entry into graduate programs is becoming increasingly competitive. Although getting a PhD in economics is a very noteworthy achievement, it is not for everyone. There are many factors to consider in deciding whether or not to attend graduate school. This section will begin by telling you all the reasons you might not want to do graduate work in economics. If you haven't been scared off by the end of this next section, then that may be a good sign that you would be a good candidate for graduate work.

MATH The first thing one should consider is the high level of math competency required for economics. BYU's economics program may be more math-oriented than other universities, but the math expected of graduate students in economics is far beyond the Calculus you do in Econ 380, 381, and 382. If you don't like math, especially proofs and analysis, graduate school might not be for you. The recommended coursework in preparing for graduate school is math heavy

and the math will not go away when you get to graduate school. A good taste of the kind of math you should be expecting comes in Math 315 Theory of Analysis. This is an essential class for graduate work and is a good indicator of things to come. Another good indicator class is Econ 580. This class is also essential for students preparing for graduate work and is taught in many ways at a graduate student level.

RESEARCH Another very significant part of graduate studies in economics is research. Getting a graduate degree in economics is all about research. To be honest, if research is not your thing, then a PhD in economics is the last thing you will want to do. Most jobs that students take after finishing graduate school are heavily research based if not exclusively so. A good introduction to graduate level research will be the work you do in Econ 388 Introduction to Econometrics. This class gives the most basic exposure to research methods and the work needed to do good research. Good research also requires good computer skills, especially computer programming skills, because most of today's research uses computer programs like STATA and MATLAB. If you don't feel comfortable behind a computer, or don't want to spend hours working with data and writing programs on the computer, you may want to reconsider your post undergraduate plans.

INCOME Also, if your primary consideration for doing graduate work in economics is money, you should change your plans. If you're interested in a large paycheck, consider getting an MBA or look into investment banking instead. Graduate work in economics is not about the money. Econ PhD graduates will still have a modest income, but if your primary consideration is money, you may find that the costs of graduate schools are not worth the rewards.

SCHOOL Finally, students who go on to graduate school are guaranteed at least another four years or five years of academic studies, possibly many more deciding on the career pursued after graduate school. If you're interested in graduate school, you should like learning and be good enough at academic work to be willing to go to school for a minimum of five more years. Again, not everyone wants to be in school until their mid to late 20s. If you're tired of school and are thinking graduate school will be any different, think again. If you go to graduate school, the coursework will only get harder and harder as you go along.

Good Indicators: Signs That You Might Be Well Suited For Graduate Studies

Having considered reasons why you might stay away from graduate school as well as incorrect motivations to go, here are some good indications that you will both like and succeed in graduate work

CURIOSITY You should love to learn and have a strong curiosity about the world around you. You should enjoy reading and learning in different forms and genuinely desire to understand why and how the world works. If you find yourself wondering about human behavior, curious about organizations and programs, interested in looking at the real effects of policies and changes, then you might enjoy graduate work. That being said, there are plenty of other disciplines ranging from psychology to organizational behavior which explore those curiosities in different ways. The primary way in which an economist looks at the world is to use data, statistics and math to understand what's going on.

MATH A good economist has a good foundation in economic theory and that theory is based in math. You should not just feel comfortable with math, but enjoy using it to solve problems and answer questions. You should not be afraid to deal with advanced calculus and some abstract theory in solving problems. The training you need to use these tools will come with time, but you should be at least willing to tolerate advanced mathematics.

PASSION If you're reading this, it goes without saying that you're intelligent. But are you passionate about economics? Do you get excited about some aspect of economics, whether it is interest rates, international trade, consumer economics, utility curves, econometrics, or game theory? You should really enjoy your economics classes and be curious to go above and beyond what is taught in lecture. Don't worry if you don't have a specific field of interest just yet, but you should genuinely get excited about it. If you can't "geek out" or get "giddy" about some part economics, you may find that you won't like spending hours and hours in class and in research exploring it.

In summary, here are some indicators you should consider in deciding on graduate studies:

Good Signs	Bad Signs
You like to learn and are curious about the world	You hate school and want to get out ASAP
You enjoy using math to solve problems	You avoid math like the plague
You are passionate about economics	You want to earn lots of money
You work well with computers and feel techno-savvy	You'd rather not sit in front of a computer

A Litmus Test: Some Ways to Help you Decide

Many students have found that attending lectures in economics by visiting scholars, taking introductory econometrics (Econ 388) and theory of analysis (Math 315), and performing research for a class or as a research assistant have helped them decide whether they'd like to continue pursuing graduate studies. All of these things give good exposure to the rigorous coursework and research that graduate students do. If you don't find you don't enjoy any of those lectures, classes, or research experiences, then graduate school is definitely not for you.

If you still feel unsure about graduate work, you should start preparing to go to graduate school and the preparation process should help you to see clearly if graduate school is really what you'd like to do. As you start the process of preparation, not only will the work you do help you to understand more about graduate work, but your interactions with faculty and other students will also give insights into the nature of graduate work. Many students don't firmly decide on doing graduate work until their second or third year at BYU, but if you've already started preparing it will be to your advantage.

II. So you want to get a PhD? Preparing for Graduate School

Overview

Once you've decided on graduate work, there is quite a bit of preparation to be completed. Even if you're not sold on going to graduate school, much of the preparation will be to your advantage in other post undergraduate options, so it is wise to start as early as possible. This section is outlined such that the preparation that must be started the earliest is listed first and the preparation that can be started latest is listed last.

Academic Coursework

In preparing for graduate work, there are some very important classes you need to take. These classes can be broken down into three different categories: economics classes, math classes, and other classes. The classes listed in the following tables as being strongly recommended are classes that most qualified applicants will take. If you are unable to take one or two of them, it doesn't mean you can't ever go to graduate school, but it does put you at a disadvantage relative to other applicants who will have taken those classes. All the classes listed in these charts are in addition to the other requirements for graduation, so keep in mind the need to complete those basic classes too (no graduate school will admit you if you don't get an undergraduate degree!).

Economics Classes

Once you complete Econ 110, you should go directly into the five core 300-level classes (Econ 378, 380, 381, 382, and 388). Additionally, you will also need to complete all four 500-level classes. 200-level economics classes are not valuable in your preparation. 400-level economics classes can be useful, but only if you have extra time and credits to burn. On the other hand, if you do have a strong interest in a particular economic topic, it might help you to take that class to further understand that interest and get ideas for potential research projects. The following chart outlines which classes you should consider taking:

Strongly Recommended	Good if you have the time
Econ 580 Advanced Price Theory	Econ 413R Applied Econometrics
Econ 581 Advanced Macroeconomics	Any 400-level Economics class
Econ 582 Topics in Advanced Economics	
Econ 588 Advanced Econometrics	

Math Classes

Math classes are very important in preparing for graduate work. Many students interested in going to graduate school – especially those interested in attending a top 5 school – will end up double majoring in math and economics. At the very least, you should have a math minor. If

you are interested in double majoring, the math department is often willing to count two of the 500-level economics classes towards your upper-division class requirements for the math major. The following chart outlines which classes you should consider taking:

Strongly Recommended	Good if you have the time
Math 112, 113 Calculus I and II*	Math 316 Theory of Analysis II*
Math 343 Elementary Linear Algebra*	Math 541, 542 Real Analysis
Math 214 Multivariate Calculus*	Math 543, 544 Probability Theory
Math 315 Theory of Analysis*	Math 513R Financial Mathematics
	Math 410, 510 Numerical Methods
	Math 451, 553 Topology
	Math 570 Matrix Analysis
	Math 334 Ordinary Differential Equations*

*Required for the major

Other Classes

As other classes go, the only other strongly recommended classes are the classes in the statistics sequence, Stat 441 and 442. However, one of the increasingly important and essential skills for economists to have is computer programming. If you decide to double major in math, you will be required to take CS 142 Introduction to Java Programming. Economists use many different programs, including, but not limited to STATA, SAS, PEARL, MATLAB, and MATHEMATICA. Any classes you can take that will help your programming skills are useful. There are other ways in which you can learn these skills, but taking a class or two to get into the programming mindset is very helpful.

Strongly Recommended	Good if you have the time
Stat 441, 442 Stat Theory	Stat 224 SAS Programming
	CS 142 Intro to Computer Programming

In summary, the following list is one that Dr. Whitney Newey, BYU graduate and current professor of econometrics at MIT, compiled of classes students should take in preparation for graduate work. It very closely mirrors the lists above.

Strongly Recommended	Good if you have the time
Econ 580 Advanced Price Theory	Math 316 Theory of Analysis II
Econ 581 Advanced Macroeconomics	Math 541, 542 Real Analysis
Econ 582 Topics in Advanced Economics	Math 543, 544 Probability Theory
Econ 588 Advanced Econometrics	Math 410, 510 Numerical Methods
Math 112, 113 Calculus I and II	Math 451, 553 Topology
Math 343 Elementary Linear Algebra	Math 570 Matrix Analysis
Math 214 Multivariate Calculus	Math 334 Ordinary Differential Equations
Math 315 Theory of Analysis	
Stat 441, 442 Stat Theory	

Timing

Looking at all the classes above, you will quickly realize that there are many classes you need to take with many different prerequisites. Sometimes the greatest challenge in taking all these classes is simply scheduling them in. First, for all the strongly recommended classes listed above, here is a list of prerequisites for each class as of the University 2008-2009 Academic Catalog.

Class	Prerequisites
Econ 580	Econ 378, 380, 382
Econ 581	Econ 380, 381, 382, 388
Econ 582	Econ 580
Econ 588	Econ 380, 381, 382, 388
Math 112	Math 110 and 111 or equivalent
Math 113	Math 112 or equivalent
Math 343	Math 112
Math 214	Math 113; Math 343 or concurrent enrollment
Math 315	Math 113, 190, and 343
Stat 441	Math 214
Stat 442	Stat 441

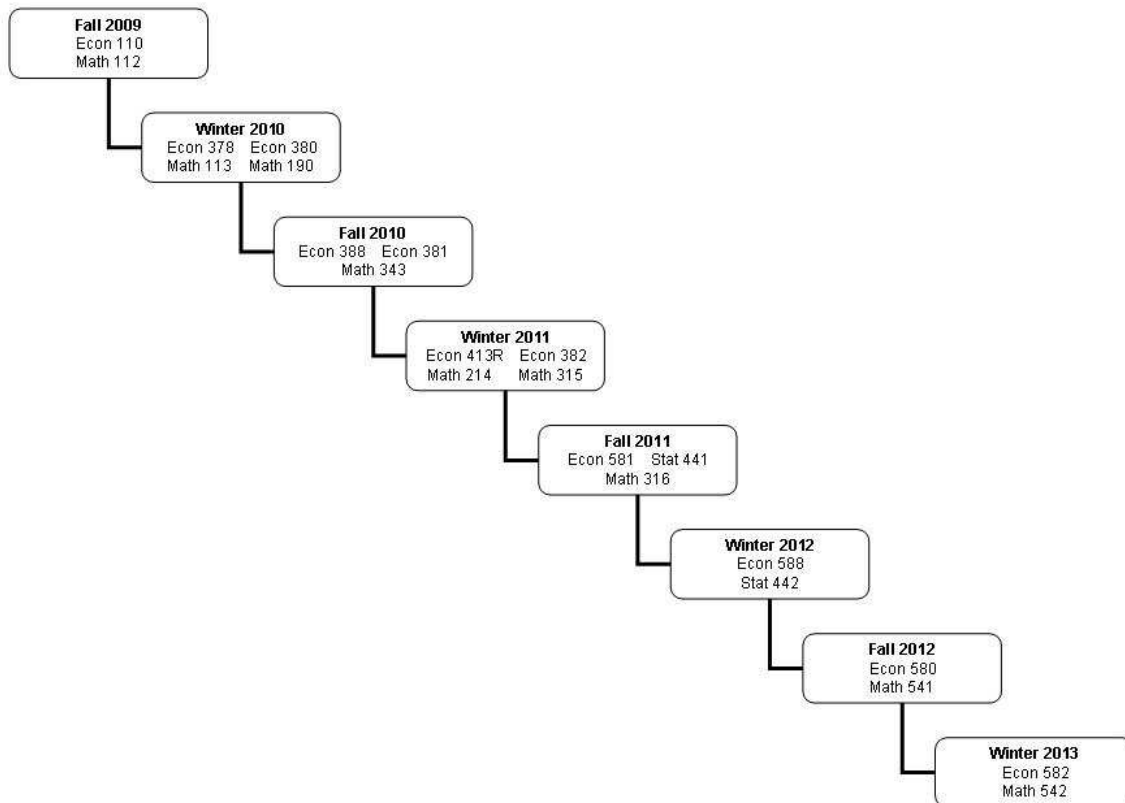
Aside from meeting the necessary prerequisites, starting early and being wise in your scheduling can help. If you wait too late to take some of these classes, you will find that there are university scheduling conflicts that can make it impossible to take all the strongly recommended classes.

Given all that, here are some tips on when to take which classes:

- Take econometrics classes early. This includes Econ 378, 388 and even 588. These classes not only serve as prerequisites for other classes, but can help you in finding a job as a research assistant.
- Take Math 343 prior to or concurrently with Econ 388. Most students have little exposure to vectors and matrices prior to Econ 388 and this class is a great primer for the theory you'll need to understand in Econ 388.
- Take Math 315 (and 316 if possible) prior to taking Econ 580. Again, this math class helps in preparing for the theory that will be taught in this economics class.
- Try to space out your 500-level economics classes. It is possible to do them two at a time in the last two semesters before you graduate, but beware of overloading yourself in your last year. If possible, take Econ 588 the winter before your senior year. Also, if you take some 500-level classes early, your grades will show up on your transcript that you send out with your application. This can better demonstrate your ability in those classes.
- You might consider taking Math 315 and 316 and Stat 441 and 442 in different years. The meeting times for these four classes sometimes overlap each other and can create giant scheduling headaches.
- Take Stat 441 and Stat 442 if possible prior to taking Econ 588. As before, the subject overlap helps you if you have already taken these statistics classes.

- If you do double major, wait to take Math 332 Complex Analysis and Math 371 Abstract Algebra until later. These classes have little overlap with your economics and other math classes.
- Get your calculus classes out of the way early. Do not wait to take Math 214.
- Don't take too many math classes in one semester. The workload for these classes is often higher than your other stats and econ classes and if you take too many, you may overload yourself.

Taking into account those tips, a sample scheduling map by semester for a student interested in graduate work might look like this:



And remember, not only is it important to complete these classes, but it is also important to do well in them. Appendix B in the back shows a list of some profiles of students who got accepted at different schools and you'll notice a common trend of high GPAs, particularly in economics and math classes. If you want to attend a top 5 school, your GPA will need to be as near to a 4.0 as humanly possible, but don't be discouraged if your freshman year was a disaster and your GPA is not perfect. Admissions committees look a lot at how you did in your math and economics classes, especially Math 315 and your 500-level economics classes. If nothing else, you will need to get good grades in these classes and your other math and economics classes.

Getting to Know the Faculty

If you want to go to graduate school, you will need to have both experience doing economic research and strong letters of recommendation from faculty. Both of these are impossible

without good relationships with the faculty. If your professors don't know who you are, you are less likely to be hired by them and they will be less likely to be willing to write you good letters of recommendation. You should try to get to know the faculty as soon as possible. The following are some ways in which you can better get to know the faculty.

Excelling in Classes

The first place to start in getting to know the faculty is the classroom. It goes without saying that you should be working hard and excelling in your classes. This alone will often get you recognized to some degree, but students who go above and beyond the minimum expectations for that A will leave even more favorable impressions on the faculty. Here are some pointers on how to leave that favorable impression:

- In class, don't fall asleep, talk incessantly with your neighbors, or do homework for other classes.
- Try to get involved in class discussions, answer questions and even pose questions when you don't understand the material. If you are really interested enough in economics to want to get a doctoral degree, you should invest as much as possible in class time.
- Beyond the time spent in class, don't be afraid to visit professors during their office hours to ask further insightful questions related to the material in class.
- Ask for advice regarding post undergraduate plans. Let that professor know by your actions that you are interested in really learning, not just the grade.
- Asking questions or visiting during office hours just to curry favor with professors is not advisable. Do it because you really want to learn.

Attending Lectures

Anyone serious about their studies in economics should make a sincere effort to hear the regular lectures given both by visiting and in-house faculty. While professors may not be paying strong attention to who is attending which lectures, just the exposure to current research and the opportunity to fraternize with other students and faculty yield great benefits in your study of economics. Lectures given by visiting faculty are highly publicized, but lectures given by resident faculty are not. The department website keeps a listing of the schedule for all of the faculty lectures by BYU professors. This schedule is also available in the economics office. These lectures are called R² lectures and are opportunities for students to go and hear what the professors here are researching and publishing. These lectures, held in 170 FOB, are limited in seating capacity, so again, if you're not really interested in the material, it's not worth going just to look good in front of professors.

Other Outlets

The Economics Student Association (ESA) often sponsors various opportunities for students to learn more about faculty and various fields in economics. Each year the ESA puts on an opening social where students have the opportunity to interact and visit with faculty in a casual setting. Also, there are often a series of cottage dinners held at faculty members' homes in which a few students on a first-come-first-served sign up basis can enjoy dinner with faculty and ask some more questions. These settings are not as valuable as the other ones mentioned, however, they present yet another opportunity for you to get your foot in the door.

Teaching/Research Assistant Experience

Once you've started in your coursework and gotten to know the faculty some, you will be better qualified to apply for jobs within the department doing teaching and research. These jobs are not about the financial incentives, but more about the invaluable experience gained and the relationships developed with professors. The following sections detail the value of these opportunities and how to find them.

Teaching Assistant

BENEFITS As mentioned before, those who work as teaching assistants usually aren't doing it for the money. There are two primary benefits that come from being a TA.

1. Those who teach a subject have to know the subject. This may seem fairly obvious, but there's a good chance that you have taken a class or two where you did well enough to get a good grade, but you still haven't mastered the material. Being a TA for any economics class will help you to solidify your understanding of that subject. Many students have found it worthwhile to TA for Econ 110, any of the 300-level economics classes, or Econ 588. These are all classes that merit taking a second look at the material. You'll find that when you're the one holding the review sessions and answering all the questions, the material will become that much clearer to you.
2. Working as a TA will help you to develop even better relationships with the faculty which will be very important when you go asking for letters of recommendation. This is the main reason why students work as TAs – to be better known by the faculty. Aside from these two reasons, there is little other value to being a TA if you want to go to graduate school. If you are forced to choose between being a TA and an RA, choose the RA job. TA experience is not essential for preparing for graduate work.

GETTING HIRED The basic requirements to be hired as a TA are to have taken Econ 110, Econ 380, Econ 381, and the class you want to be a TA for. You need to have good grades in those classes and hopefully you are familiar with the faculty teaching those classes. Some faculty members will approach students directly about opportunities to be a TA; others will just hire from the pool of applications submitted to the econ office. Be sure to submit your application on time or else you may not be considered. Your best chance to get hired in is the fall and winter semesters when there are more classes being taught.

Research Assistant

BENEFITS Whereas TA experience is not needed in preparing for graduate school, research experience is essential. There are many benefits to being an RA. Some of these benefits are:

- Additional opportunities to better get to know the faculty
- Opportunities to publish or co-author a paper with your professor
- Increased computer programming skills
- Better understanding of economic theory and its application in research
- Knowledge regarding gathering and cleaning up data
- Higher ability to comprehend economic literature
- Instruction and experience in the overall research process
- Flexible schedule- you set your own hours

Because so much of the emphasis in graduate economics is on research, getting firsthand experience as a research assistant is excellent preparation for the work you will do in graduate school. It also serves as another opportunity to really evaluate if graduate school is really what you want to do.

GETTING HIRED What does it take to get a research job? Unlike TA jobs, there is no standard application for RA positions. If you are interested in being a research assistant, you'll need to get out and talk to professors. The best way to find research opportunities is to talk to the professor of an economics class you are doing well in. If he can champion your cause and confidently recommend you to other professors, then you're well on your way to finding that research job. The earlier you can start work as a research assistant, the better. Most professors like students to have taken Econ 388 before hiring them as research assistants, however some hire students before then to do more data-oriented work. Professors are also interested in students with a strong programming background. If you are comfortable with programming, whether it be STATA, SAS, JAVA, or anything else, that will also be very significant in qualifying for research positions. Knocking doors is a last-ditch approach to finding a research job, but is rarely effective. Start talking to professors early about your interest in research and then see what opens up. If nothing is available at first, go be a TA for a semester and try again.

INDEPENDENT RESEARCH Sometimes students have an idea they are passionate about and are interested in doing more research in that field. If you have such an interest, there may be opportunities to get an ORCA grant and gain significant experience in doing independent research. Writing a thesis like this can also help to fulfill requirements for graduating with honors, another valuable distinction. However, be warned – if there is no professor who shares your interest, you will have difficulty finding strong support from a faculty member, something that is essential to succeed in undergraduate research. In your research experience, while it may be ideal to be doing work that you yourself find interesting, the most important thing is the experience.

III. The Application Process

Once you've completed all that preparation, it is important that you represent yourself well in the application process. Be mindful of the time it will take to complete your applications- you want to get them in on time, and you don't want to be rushed. To help you spread out the timing of your application process, here is a suggested schedule to help you stay on track.

Suggested timing	Action
Summer before your final year	Make preliminary decisions on which schools you would be interested in applying to
Summer before your final year	Identify opportunities for outside funding and look over the application requirements
August before your final year	Take the GRE examination
Late August/Early September before final year	Look at the applications for all the school you wish to apply to and notice necessary parts of the application
October of your last fall semester	Ask professors for letters of recommendation
Late October/Early November of last fall semester	Write statement of objectives for application
Mid November/Early December	Complete Applications

There will be many other students from many other universities applying to the same schools you are. Many of these students will have very similar credentials to yours. In going through the application process, you should try to show the very best that you've done so that you stand out to the admissions committee. With so many candidates applying every year, many admissions committees are looking for excuses to deny your application, so don't give them any by poorly preparing any portion of the application.

Choosing Schools to Apply to

The summer before your final year of undergraduate studies you should begin looking into different graduate schools you might want to attend. The earlier you start your application process for these schools the better off you will be.

HOW MANY SCHOOLS SHOULD I APPLY TO? Many students wonder how many schools they should apply to. In selecting schools to apply to, you should try to diversify the different types of schools you apply to. The more diversified your school selection is and the more school you select, the greater the likelihood will be that you get in somewhere. However, application costs can add up as many schools charge around \$80 per application. Factor in the \$2 cost for each

transcript sent out as well as the \$12 cost for extra GRE score reports and there's quite a bit of money involved. Ultimately, the number of schools you apply to depends on how much risk you're willing to take and how much money you're willing to spend. Most undergraduates, however, will not apply to more than 10 schools, but you should apply to at least four or five schools.

UNDERSTANDING DIFFERENT PROGRAMS In considering which schools you would be interested in, you should first gather some general information about the school by visiting its website. As you look at different schools, you should start to ask yourself, "Would I really go there if I was accepted?" Of course, if you are married, your opinion is not the only one that counts so bear that in mind. Once you have some general information, go and talk to faculty members who know you and ask them what schools would be a good fit. Faculty can also help you to have more updated information about the details of specific programs.

DECIDING ON SCHOOLS In deciding on which schools you want to apply to, don't give too much weight to any school's particular specialty. If you are absolutely set on what you want to do, then perhaps you should look more at which schools match your specific interest, but many students find that their interests change as they start graduate coursework. Considering this, you should try to go to the best school you can and not necessarily a school whose program is only strong in one field. A list of the latest ranking of the top 25 US graduate programs in economics is located in Appendix A.

If you think you are not likely to get into a top 5 program, don't be discouraged. You can receive excellent training at any of the top 20 universities. And even students who go to MIT can receive lousy training – it all depends on what you do once you get there. If you are finding it difficult to get in to any of the top 20 schools, you may consider working for a year and then re-applying.

External Funding

Applying to graduate school can be expensive, but attending graduate school is very expensive. For most students attending graduate school, funding for their studies comes from the university. And even for students who do not receive funding their first year, almost all students can obtain some degree of funding by their second year. However, receiving outside funding can further offset your costs and also improve your chances at getting into better schools.

COMMON SOURCES OF FUNDING For students pursuing graduate work in economics, the most common sources of outside funding are an NSF fellowship or a Javits fellowship, but these are prestigious grants and are awarded to only a very few students nationwide. Regardless of your chances of receiving these scholarships, applying for them will work to your benefit because every application you fill out will ask what outside funding you have applied for. If they see you have applied for these prestigious scholarships, it says to them that you believe you are potentially qualified to receive such funding. If you are interested in more information on how to apply for these grants or fellowships, consult Appendix C for more information.

GRE Preparation and Performance

Most of the graduate schools you will apply to will require you to take the general GRE test. This consists of three portions: a verbal section, an analytical writing section, and a quantitative reasoning section. The quantitative reasoning section is the most important of the three. Many applicants will get a perfect score of 800 on the quantitative section, and anything below a 700 on that section may merit retaking the exam. The other two sections hold little weight with admissions committees, however, extremely poor performance could harm you, so don't completely ignore those sections.

PREPARATION With the preparation you have done in math and economics, scoring well on the quantitative section should not be too difficult, however, be sure to prepare yourself by taking several practice exams until you feel comfortable with the format of the test. If you want to be extra well prepared, you may consider exploring some other test preparation resources. A list of these is also included in Appendix C.

RETAKE THE TEST If you do poorly, you can retake the GRE, but again remember – taking the GRE is not cheap. The current fee is \$140 for the general test, and sending score reports the first 4 institutions or schools you choose are free, but each additional score report costs \$12. You would be best served by preparing well and then getting the GRE out of the way early so you aren't stressing over it as test deadlines approach.

Letters of Recommendation

A key component of your application will be the letters of application that faculty members write for you. In requesting faculty to write letters of recommendation on your behalf, you should give them adequate time to write the letter. The more time they have, the better the letter they write will be.

In deciding which faculty members to ask to write letters for you, consider the following:

- Try to have your letters of recommendation come from economics professors. If anyone on the admissions committee recognizes the professor writing the letter it can provide a marginal advantage in admissions decisions. Also, admissions committees are better able to evaluate the careers of economics professors, helping them to decide if these letters have much merit. They find it more difficult to evaluate letters from sources and are likely to undervalue the opinions in those letters.
- Don't pressure anyone into writing a letter for you. Before asking a professor to write a letter for you, ask them, "Would you feel comfortable writing a letter of recommendation for me for graduate school?" Bad letters can hurt your application, so make sure that the faculty members you ask will write you a good letter.
- You need letters that make it sound like you can walk on water. Try to get these letters from faculty whom you have worked for before, or in whose classes you have noticeably excelled.
- To have a strong application means you need to have strong letters of recommendation which means you need to be a strong candidate. Professors can't change your grades or the work you've done so far. Having good letters has a lot to do with preparation you've already done.

- Any help you can give the professors in writing letters on your behalf will be appreciated. Be sure to give them a resume, a letter or form indicating which schools you will be applying to, and any other information regarding specific facts or accomplishments they are aware of but may have forgotten.

Writing Personal Statements

While the personal statement (or statement of objectives as it is called in some applications) is not likely to be the determining factor in getting you admitted to graduate school, it can certainly keep you out if it is poorly written. Here are some tips on writing that statement:

- Write a well thought statement that matches the prompt given by the school you're applying to. The prompt is a good guide for deciding what to write about
- Most schools will ask you regarding your research interests, why you wish to do graduate work, your professional goals, and how that school will help you accomplish these goals. Be realistic in writing these – the admissions committees will not be swayed by moving descriptions of one's passion for economics.
- Try to be specific in describing experience in research as well as your proficiency in upper-level mathematics. Greater specifics indicate greater competency.
- Describe your research interests as specifically as possible, but don't talk too much about research interests if you don't have any or if you don't know what you really want to do.
- References to specific faculty members or papers written by faculty members can be beneficial.
- You will likely be writing a lot of these, so if there's any way you can find a format that you can reuse multiple times it may help save time

Completing the Application

Once you've completed the above steps, likely all that will be left is just filling out paperwork online and sending in transcripts to your different schools. But don't delay! Some schools will waive part of the application fee if you meet an early deadline, so it is in your favor to get your application in early. Also, if you are receiving PELL grants, some of the application fees may be waived entirely.

Once your application is in, do not get overly anxious about hearing back from schools by any given deadline. Many schools are notorious for not meeting the deadlines they set forth in their application information. Don't contact faculty at the universities you are applying to in the application process if that letter takes too long to arrive in the mail – it generally does not result in favorable first impressions.

IV. Conclusion

Summary

Preparing for graduate school in economics requires a lot of work and admission to successful programs can be very competitive. If you think it is for you, start as early as possible so you can get the maximum amount of preparation in before it is time to submit applications. The best way to summarize the preparation necessary for graduate school is to immerse yourself in economics and math. Attend all the lectures you can, get all the math classes you can fit in, seize every chance to visit with professors and get extra insights into various topics. You should genuinely enjoy economics to the point where all of this starts to come naturally as you go on in your studies. So plan out your classes, go and meet the faculty and good luck!

V. Appendices

Appendix A: US World News and Report Rankings of Top 25 US Graduate Programs in Economics, 2005

Rank	School	Score
1	Massachusetts Institute of Technology	5.0
1	University of Chicago	5.0
3	Harvard University	4.9
3	Princeton University	4.9
3	Stanford University	4.9
3	University of California – Berkeley	4.9
7	Yale University	4.8
8	Northwestern University	4.6
9	University of Pennsylvania	4.5
10	University of California – San Diego	4.3
11	Columbia University	4.2
11	University of California – Los Angeles	4.2
11	University of Michigan – Ann Arbor	4.2
11	University of Wisconsin - Madison	4.2
15	New York University	4.1
15	University of Minnesota – Twin Cities	4.1
17	California Institute of Technology	4.0
17	Cornell University	4.0
19	University of Rochester	3.9
20	Carnegie Mellon University	3.8
21	Brown University	3.7
21	Duke University	3.7
21	University of Maryland – College Park	3.7
24	Johns Hopkins University	3.6
25	Boston University	3.5
25	University of Texas – Austin	3.5

Information gathered from "Best Graduate Schools: Economics." US News & World Report. US News & World Report. <<http://grad-schools.usnews.rankingsandreviews.com>>

Appendix B: Selected Applicant Profiles from 2002-2004

School	Year	Status	GRE (Math, Verbal)	Undergraduate	Coursework	Other Notes
MIT	2004	Accepted	790, 690	Chicago 3.76 GPA	Math, Econ, Stat Triple Major	
	2002	Accepted	790, 800	MIT 3.95 GPA	Math/Econ Double Major	2 yrs RA experience
	2004	Waitlisted (Rejected)	800, 700	UNC 3.88 GPA	Calculus, Econometrics, Linear Algebra, Differential Equations	Junior Professional Associate at World Bank
	2004	Rejected	800, 450	Berkeley 3.2 GPA	Calculus, Linear Algebra, Real Analysis	1.5 yrs RA experience
	2003	Rejected	800, 600	Colorado 3.87 GPA	Calculus, Linear Algebra, Econometrics	1 semester RA
Chicago	2004	Accepted	800, 620	Chicago 3.55 GPA	Math/Econ Double Major	2 yrs TA, 2 yrs RA, 1 yr work experience
	2002	Accepted	790, 600	Berkeley 3.95 GPA	Math/Econ Double Major	
	2003	Rejected	800, 620	3.9 GPA	Calculus, Linear Algebra, Diff Eq, Probability	
	2003	Rejected	800, 510	UCSD 3.65 GPA	Real Analysis, Econometrics, Grad. Econometrics/Probability	
Harvard	2002	Accepted	790, 650	Summa Cum Laude	Calculus, Linear Algebra, Diff Eq, Real Analysis	Good math-intensive thesis
	2002	Waitlisted	800, ?	3.97 GPA	Math/Econ Double Major	
	2004	Rejected	800, 700	3.5 GPA	Calculus, Linear Algebra, Econometrics, Real Analysis	2 yr RA, 1 yr TA
	2004	Rejected	800, 660	3.5 GPA	Calculus, Linear Algebra, Econometrics, Prob Theory	
Stanford	2002	Accepted	800, ?	4.0 GPA		
	2004	Rejected	800, 680	3.7 GPA	Calculus, Matrix Algebra, Real Analysis, Grad. Math	RA experience
	2003	Rejected	800, 610	Texas 3.96 GPA	Calculus, Linear Algebra, Statistics	Working on a JD
	2003	Rejected	770, 800	Stanford 3.55 GPA	Calculus, Linear Algebra, Real Analysis, Econometrics	Programming experience
U Penn	2003	Accepted	800, 650	3.9 GPA	Calculus, Linear Algebra, Diff Eq, Probability	2 yrs RA experience
	2002	Accepted	800, 650	3.93 GPA	Math minor	International Student
Wisconsin	2004	Accepted	780, 560	First class honors	Calculus, Linear Algebra, Diff Eq, Econometrics	RA experience
	2003	Accepted	800, 540	Oregon 3.34 GPA	Calculus, Linear Algebra, Real Analysis, Topology, Econometrics	Masters student
	2004	Rejected	790, 610	3.6 GPA	Calculus, Linear Algebra, Math Statistics	
	2004	Rejected	750, 640	3.7 GPA	Calculus, Linear Algebra, Stats	2 yrs experience at Fed
Cornell	2003	Accepted	800, 620	UCLA 3.5 GPA	Calculus, Linear Algebra, Econometrics	6 yrs work experience
	2004	Rejected	780, 770	3.5 GPA	Calculus, Linear Algebra, Diff Eq, Econometrics	
	2003	Rejected	800, 480	Wyoming 3.76 GPA	Calculus, Linear Algebra, Diff Eq, Econometrics, Matrix Theory	RA experience
Texas	2003	Accepted	780, 560	3.8 GPA	Calculus, Linear Algebra, Econometrics	

Profiles drawn from Roesser, Christian. "Decision Tables." Econ PhD. <www.econphd.net>.

Appendix C: Additional Resources

General Information

BYU Economics Department (econ.byu.edu)

While there is not as much information here as there is in some other places, it's often the best place to start. One nice resource here is a list of graduate school representatives who can be contacted for more information about different schools' programs.

Econ PhD (www.econphd.net)

Site dedicated to information about PhD programs in economics and how to prepare for them. Highly recommended.

UCLA Admission Statistics

(econyang.bol.ucla.edu/other/admission.info/admission.info.htm)

Statistics regarding graduate admissions to UCLA and other universities

Advice on Getting into Graduate School (www.stanford.edu/~athey/gradadv.html)

A Stanford professor's advice on applying to graduate school.

Gregory Mankiw Blog (gregmankiw.blogspot.com)

Gregory Mankiw is a former chairman of the National Council of Economic Advisors and a professor of economics at Harvard. His blog has quite a few posts and links to other posts with advice about preparing for graduate work in economics.

Becoming an Economist (www.chrissilvey.com/archiveadvice)

A compilation of responses from students in graduate programs answering questions regarding preparation for graduate school.

Test Magic Economics Forum (<http://www.urch.com/forums/phd-economics>)

One of many forums with discussions about the application process and other subjects related to economics.

External Funding

BYU Office of Prestigious Scholarships and Grants (opsf.byu.edu)

BYU's Office of Prestigious Scholarships and Grants has a wealth of information about and links to scholarships you might consider as you apply to graduate school. This would be the best place to start in looking up scholarship/grant/fellowship opportunities.

Jacob K. Javits Fellowship (www.ed.gov/programs/jacobjavits)

This is the official site for the Jacob Javits fellowship. It has all the information you need to apply for this grant.

National Science Foundation (www.fastlane.nsf.gov/grfp)

This is the official site for the NSF fellowship. The application is available here, but I recommend reading up on it from another source because the page can be confusing.

Institute for Humane Studies (www.theihs.org/hsf)

This is the official site for the Institute for Humane Studies, which also offers grants which some BYU economics students are eligible for.

GRE Test Preparation Resources

GRE Official Site (www.gre.org)

This is the official site for the GRE, and it contains many details about the test, test locations, and fees. There are also some practice materials available here.

Princeton Review (www.princetonreview.com/grad/testprep)

The Princeton Review site contains additional details about the GRE and also provides listings and opportunities for review classes, as well as more practice materials.

800score.com (www.800score.com)

This website is designed to help students get perfect scores on the GRE and has a large breadth of practice materials and resources.

Kaplan Test Prep and Admissions (www.kaptest.com/gre)

The Kaplan site contains yet more resources and practice tests students can use to prepare for the GRE.