

# ALUMNI NEWS

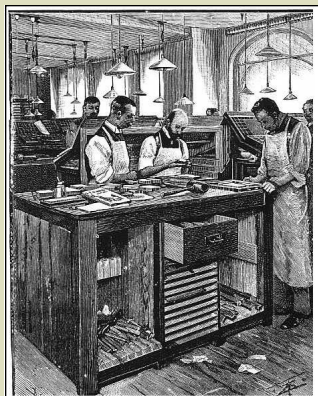
## DEPARTMENT OF ECONOMICS

INDIANA UNIVERSITY OF PENNSYLVANIA ☞ INDIANA, PA 15705-1087

Issue 47, Spring 2010

### ECONOMISTS AT THE MOVIES \*

BY DR. JAMES J. JOZEFOWICZ



\*A summary of "A Blueprint for Success in the U.S. Film Industry," an article authored by Stephanie M. Brewer, Jason M. Kelley, and James J. Jozefowicz published in *Applied Economics*, 2009, 41(5), p. 589-606. {This co-authored paper arose from Jason Kelley's ('03) Honors Thesis}

An assortment of films is released to the American viewing public every Friday. While some movies generate immediate box office success and remain in the theaters for many weeks, others are quickly removed from the screens and promptly replaced with new box office hopefuls. Have you ever seen a commercial for a new movie only to wonder what happened to it when you make it to the theater? Cinema statistics provide little comfort to film producers. In his 1990 book *Entertainment Industry Economics: A Guide for Financial Analysis*, H.L. Vogel reports that "of any 10 major theatrical films produced, on average 6 or 7 are unprofitable, and 1 will break even" (p. 29). With such dim prospects, motion picture production studios are constantly seeking to discover the formula for financially successful films.

Fortunately for film producers, multiple economists have studied the motion picture phenomenon over the last twenty-five years. Stephanie M. Brewer Jozefowicz, alumnus Jason Kelley ('03), and myself add to the economic literature with our analysis of a sample of the top 100 domestic grossing films from each year over the period 1997 through 2001.

Studies have begun to clarify one of the largest issues of film revenue prediction: demand for a film cannot be entirely predicted

prior to its release. Studios must not identify only the determinants of financially successful films; they must also identify the characteristics that can be controlled for prior to release (*ex ante*) and which qualities are not revealed until it is too late (*ex post*).

Our goal was to construct a model that predicts the financial performance of films, as measured by gross domestic revenue, based on a number of readily available characteristics. The indicators were divided into *ex ante* and *ex post* models, in an effort to demonstrate how well success can be predicted before and after the lights have dimmed on opening night.

What factors do you think affect the financial performance of a film? Many of them are fairly obvious, and include determinants such as MPAA rating (G, PG, PG-13, R), critical reviews, production budget, genre (Drama, Comedy Drama, Horror, Science Fiction, Action-Adventure), release season (Thanksgiving/Christmas, Summer), number of screens the movie was shown on, the effect of sequels, the presence of certain stars, movie critic reviews, and award nominations. In addition, we include an indicator of success that has been largely overlooked in the literature, such as word-of-mouth

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#### Editor:

Jack D. Julian, Jr.

#### Assistant Editor:

Sarah E. Jackson

FACULTY / STUDENT RESEARCH

## MOVIES: HIT OR MISS

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transfer of information between consumers (as measured by CinemaScore reviews).

### **Ex Ante Model Results**

Based upon our analysis of the *ex ante* model, some interesting results are obtained. Although production budget matters to film success, a 1% increase in a film's budget will correspond with an increase of only 0.375% in revenue. Such results indicate decreasing returns to a studio's film investment, and demonstrate revenue's lack of responsiveness to changes in the budget variable. Some researchers argue that the production budget has the ability to raise the minimum revenue that a movie might earn, but has a relatively small influence on its potential maximum. This finding of decreasing returns supports the notion that budget alone is not enough to ensure a film's success. In his 2004 book, *Hollywood Economics: How Extreme Uncertainty Shapes the Film Industry*, A. De Vany suggests it is also likely that diminishing returns occur at a certain budget level, where the increase in spending is no longer obvious on the movie screen in the form of special effects or key actors (p. 134).

The presence of certain stars increases film revenue, but we believe that stars themselves do not actually cause movies to be successful. More likely, stars select film projects that already have an increased potential for success. Films released during the summer and holiday seasons experience 14.4% and 7.0% higher revenues, respectively.

If a movie is a sequel to another film, a 1% increase in the preceding film's gross revenue will result in an increase of 0.016% in the sequel's gross revenue, all other things being equal. This also supports the notion that sequels usually only earn a fraction of the gross of the original film.

There is a consistent demand for violent films as evident in the importance of the action-adventure and horror genres in our study. On the other hand, comedies and comedy-dramas both also have wide-reaching appeal. Animated and science fiction features have a more hit-or-miss character, perhaps because they have more limited target audiences of children's and science fiction aficionados. For this reason, these film genres tend to be riskier undertakings for studios relative to violent, R-rated films.

PG-13 is the only significant MPAA rating in our sample, which may suggest that PG-13 films tend to yield higher revenues due to a mature audience with higher levels of disposable income. Older moviegoers also attend evening viewings which allows theaters more showings. Alternatively, the target audiences of G and PG films are younger, conservative, and make up a small proportion of the aggregate population. Like the children's genre audience, these groups are less consistent in their attendance.

According to our findings for the impact of personal income on movie gross revenue, moviegoing is a normal leisure activity with an income elasticity of 4.6.

### **Ex Post Model Results**

Turning our attention to the *ex post* model, it appears that releasing films during the summer is more lucrative than releasing them during the Thanksgiving/Christmas holiday season. One could argue that because the longer summer season is uninterrupted for three months, it has greater revenue earning potential than the shorter, interrupted Thanksgiving and Christmas vacations. Holiday release films drop in revenue upon the termination of the holiday while a summer release film would not experience the seasonal conclusion drop until long after it had peaked and been replaced.

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**Dr. James J. Jozefowicz**

## MEET THE EDITOR

Dr. Jack Julian has been editor of the department's alumni newsletter since 2003. He took the mantle from his worthy predecessor, Dr. Robert Stonebraker. As editor he tends to avoid the limelight of the newsletter. However, this semester the newly appointed assistant editor, Dr. Sarah E. Jackson, decided the readers should know something about him.

**Sarah Jackson:** How long have you been at IUP?

**Jack Julian:** I came to IUP as a visiting professor for the 2003–2004 school year. I became a full-time assistant professor beginning the 2004–2005 school year. I was granted tenure the summer of 2009 and will apparently be sticking around for quite a while now.

**SJ:** Where were you before IUP?

**JJ:** Before IUP I was a visiting professor for four years at the College of Wooster in Wooster, Ohio. It was very different from IUP. It is a small 4-year private liberal arts college in Northeast Ohio. I credit them for giving me a large amount of teaching experience as well as the opportunity to finish my doctoral dissertation at the University of Cincinnati. While in Cincinnati I taught classes at UC as well as Xavier University in Cincinnati and Earlham College in Richmond, Indiana.

While in graduate school held an assistantship and worked part-time at the Greater Cincinnati Center for Economic Education. I had been in the economic education field for several years, working at Centers for Economic Education at the University of Akron (Ohio) and University of Nebraska (Lincoln, Nebraska). It was my work in the field of economic education that inspired me to go on and get the Ph.D. The University of Cincinnati offered me the environment in which I could do Ph.D. studies as well as continue working and networking in the economic education area.

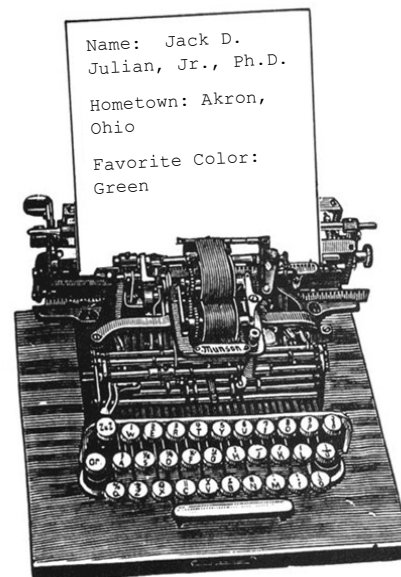
**SJ:** What courses do you teach? Is there anything you would like to teach that you haven't had the chance to yet?



Dr. Jack D. Julian, Jr.

**JJ:** As with everyone else in the department, I teach my fair share of principles of economics courses. I really do enjoy teaching those classes. I also really enjoy teaching the larger sections that we offer in the old lecture hall in Keith Hall. I don't know; there is something old school about that room that I really enjoy. The upper-level courses I teach a lot are International Trade and International Finance. I had a very good international trade professor at the University of Cincinnati and was exposed to some of the most cutting edge research in economics. I love talking about that material.

Among the courses I would like to teach sometime are statistical methods and econometrics. That was one of my areas of advanced study at Cincinnati, as well as history of economic thought. Due to available staffing issues I'm finding it hard to get those classes as my expertise is better allocated to the international economics area. But lately I have been teaching macroanalysis (ECON 421) which I find very enjoyable. I do like teaching the technical stuff. It's very elegant and to some degree, playful. Since empirical studies rely on a solid theoretical basis, the technical theoretical component relies on some elegant and simple economic models. I always thought models were fun to build and play with, as well as to just look at and enjoy. It is a way of finding beauty in the otherwise mundane. I think that is one of the things economists are good at: finding beauty in the ordi-



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## MOVIES: HIT OR MISS

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While praise from movie critics does increase gross revenue, word-of-mouth approbation for a film has a greater impact. For each incremental increase in the Cinemascore grade, a 4% increase is expected in gross revenue, all else equal. It is therefore beneficial for films to impress audiences early in their run in order to gain strength and longevity. This finding demonstrates that while positive critic opinions still encourage attendance in the post-release market, a consumer responds more to the word-of-mouth opinions of other consumers. The significant impact of CinemaScore grade is an important result because it establishes the crucial role of word-of-mouth information transfer.

The number of award nominations a film receives is an effective signal of quality to the moviegoing public. In fact, each additional film nomination leads to a 1.7% increase in gross revenue, *ceteris paribus*. A similar quality signal is sent by the presence of stars in a film based upon our list of 66 high profile stars from the annual top ten "favorite movie star" lists published by the Harris Poll and the annual People's Choice Award nominees for the following categories: Motion Picture Actor, Motion Picture Actress, Male Television Performer, and Female Television Performer.

The peak number of screens the movie was displayed on has an effect that is almost four times greater than that of the production budget. The elasticity of gross revenue with respect to peak screens is 1.5 whereas the elasticity of gross revenue with respect to production budget is 0.36. The increasing returns to peak screens may support the notion that screens have the potential to "prop up" the minimum revenue that a movie might earn. It is possible that some moviegoers attend films regardless of quality and view whatever is playing locally. This is similar to a sports fan who is likely to watch any game that is televised.

### Summary

Using information available prior to a film's release, the *ex ante* results indicate that production budget, the gross of a prequel, income, favorable critical reviews, summer releases, and Thanksgiving/Christmas releases increase gross revenue. The results of the *ex post* model demonstrate that peak screens, stardom, film award nominations, and positive word-of-mouth information sharing meaningfully promote film financial performance. The impacts of production

budget, the gross of a prequel, positive critical reviews, and release dates during the summer and Thanksgiving/Christmas seasons are similar across the *ex ante* and *ex post* models. The action-adventure and comedy genres were also consistently positive and statistically significant across the models.

A few remarkable differences emerge when comparing the *ex ante* and *ex post* regressions. Based on the results, it appears that personal income, the comedy-drama genre, and the PG-13 rating are important positive factors in the financial success of a film when moviegoers know relatively little about a picture. Once a film is released and more information is made available to customers, these determinants cease to matter appreciably. Perhaps most notably, the *ex post* results reveal the importance of award nomination and word-of-mouth praise in the financial success of films. It appears that indicators of film quality such as approbation from the motion picture industry and praise from peer moviegoers result in higher gross revenue. ♦



### MEET THE EDITOR, CONT.

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nary business of life (to paraphrase Alfred Marshall).

**SJ:** You wear a lot of hats in the department; which one is your favorite? Your least favorite?

**JJ:** Well, I do love going to class. Teaching is the high point of my job. It is a time where I have so much focus and little distraction. I forget all of my other troubles and other work and talk about economics for fifty or seventy five minutes. I'm never so focused as I am when I'm teaching a class.

The worst part goes along with the best part. I really don't like grading papers. I do learn a lot from grading. I can tell if I'm doing a good job if the students are learning and applying the material. These are opportunities for students to display their acquired knowledge and understanding. So on one hand the assessment component does provide me feedback as to how well I'm doing teaching the material. But unfortunately, grading requires some focus and concentration that is difficult to muster. It is not nearly exciting as teaching the class. If that's a copout answer, well, the other thing I hate is dealing with meetings. I do enjoy my committee work and

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## FACULTY NOTES

"Estimating Core Unemployable And Workforce Non-Participants: A Study of Pennsylvania's Labor Force", co-authored by **Dr. Jack D. Julian, Dr. David B. Yerger**, and former student **Ms. C. Elizabeth Hall**, was published in the February 2010 edition of the *Journal of Business and Economics Research*.

**Dr. James J. Jozefowicz** and **Dr. Stephanie M. Brewer Jozefowicz** attended the National Association of Economic Educators Professional Development Conference in Oklahoma City, OK, on February 25-27, 2010. Jim co-chairs the NAEE Professional Development Committee and Stephanie serves on the committee. They both helped to organize the conference.

**Dr. Yaya Sissoko** presented "Current Account Sustainability in African Communities: Are there Regional Differences," co-authored with Niloufer Sohradji, at the 36<sup>th</sup> Eastern Economic Association (EEA) Annual Conference in Philadelphia, PA on February 26 - 28, 2010. He also served as the discussant for another paper and attended the Presidential Address given by N. Gregory Mankiw.

**Dr. James J. Jozefowicz** and **Dr. Stephanie M. Jozefowicz** were both recognized by IUP for 10 years of service.

"Rural Pennsylvania Underemployment And Its Determinants," co-authored by **Dr. Jack D. Julian, Dr. David B. Yerger**, and former student **Ms. C. Elizabeth Hall** was published in the March 2010 edition of the *Journal of Business and Economics Research*.

**Dr. Willard Radell's** paper, "Economic Logic in Cuba's 2002 Sugar Industry Restructuring?", was published in Volume 19 of *Cuba In Transition*, sponsored by the Association for the Study of the Cuban Economy.

**Dr. Sarah E. Jackson** presented "The Effect of Legal Intervention on Youthful Offenders" at the Midwest Economic Association Conference in Evansville, IL, on March 19-21, 2010. She also served as a discussant and a session chair during the conference.

**Dr. James J. Jozefowicz** served as editor of the *Proceedings of the Pennsylvania Economic Association 2009 Conference*.

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## MEET THE EDITOR, CONTINUED

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am proud to serve on the University Senate and the Senate Committee on Student Affairs. It's exciting when we discuss policy and we get into heated discussions. But not all committee meetings are all that exciting. After having spent a lot of time in front of the class, it is difficult for me to sit still for an hour-and-a-half at a meeting. But even though these are things I like the least, it is important work. I think most people who love their jobs have to deal with some parts that are a bit unsavory. I hope I don't complain about it too much. I really shouldn't complain.

**SJ:** How do you spend your time outside of work?

**JJ:** I look for opportunities to get out of Indiana whenever I am able. Having gone to school for a while and working at a few

*(Continued on page 8)*

## UNDERGRADUATE SCHOLARS FORUM

On Thursday, April 1, the **Fifth Annual Undergraduate Scholars Forum** took place in the Hadley Union Building (HUB) at IUP. Although the Undergraduate Scholars Forum is an initiative begun by IUP President Tony Atwater in 2006, undergraduate students from the Department of Economics have a longstanding tradition of carrying out research projects. Do you remember (fondly or not-so-fondly) your own research paper completed in the days when the Keith Hall was home to the Department of Economics?

A dozen students from the Department of Economics participated in this year's Undergraduate Scholars Forum. Year after year, the Department of Economics is responsible for one of the largest cohorts of student participants from the College of Humanities and Social Sciences at the Undergraduate Scholars Forum. **Dr. Yaya Sissoko** organized the "Economic Development in Africa" and the "Educational and Economic Development" sessions, and **Dr. James Jozefowicz** organized the "Topics in Applied Economics" session. The student presenters, who had taken the Economic Development, Poverty in Africa, or Introduction to Econometrics courses, were advised by **Drs. Stephanie Jozefowicz, James Jozefowicz** and **Yaya Sissoko**. Economics majors **Antonio Ayllon, Mitch DeRubis, Zach Hartman, and Paul Lyter** served as student moderators for sessions at the Undergraduate Scholars Forum. The following students presented their papers:



**Dr. Yaya Sissoko with four of his students who presented at the 2010 IUP Undergraduate Scholars Forum on April 1. From left to right, Erin Motter, Adrian McGraw, Kelly Shaw, and Victoria Woodland.**

◆ **James Dalecki** "Excise Taxes and the Demand for Beer: The Case of the Commonwealth of Pennsylvania"



**Dr. James J. Jozefowicz with three of his students who presented at the 2010 IUP Undergraduate Scholars Forum on April 1. From left to right, Yi-Chieh Lin, Brett Hollabaugh, and James Dalecki.**

- ◆ **Brett Hollabaugh** "Determinants of an NHL Defenseman's Salary"
- ◆ **Yi-Chieh Lin** "Explaining the Gender Wage Gap in Taiwan"
- ◆ **Paul Lyter** "An Analysis of Federal Mine-Safety Legislation and Mine Fatality Levels"
- ◆ **Kayla Grimes** "Economic and Political Struggle of Zimbabwe"
- ◆ **Semawit Gezahegn** "Rural Development in Ethiopia"
- ◆ **Odinaka Onovo** "Nigeria: Oil, Blood and Development"
- ◆ **Nathan Donsen** "Real Cost of Cocaine Production in Columbia"
- ◆ **Erin Motter** and **Victoria Woodland** "Rural Poverty in Africa"
- ◆ **Adriane McGraw** and **Kelly Shaw** "Equal Employment in Africa"

Congratulations to Brett Hollabaugh, Odinaka Onovo, Adriane McGraw and Kelly Shaw, Erin Motter and Victoria Woodland, and Paul Lyter who won Outstanding Presentation Awards and to Semawit Gezahegn who won an Honorable Mention!

## ECONOMICS CLUB

### ECONOMICS CLUB NEWS

This semester, the Economics Club has hosted the following alumni speakers:

**Alex Kline ('83)**

If you plan to be in the area or live in the area and would be interested in speaking to the Economics Club, please contact Jim Jozefowicz at [James.Jozefowicz@iup.edu](mailto:James.Jozefowicz@iup.edu)



**Alex Kline ('83) speaking to the Economics Club**

The Spring 2010 Economics Club alumni speaker, **Alex Kline ('83)**, addressed a crowd of more than forty students on Tuesday, March 23, in McElhane Hall. Alex graduated from IUP in 1983 with a degree in economics. He is currently the Wealth Management Group Team Leader for Huntington Bank in Pittsburgh, PA. During his talk, Alex emphasized the importance of the core fundamentals of economics, especially supply and demand, in everyday life. In describing studying economics at IUP, Alex observed, "The key thing that I learned from my IUP Economics days was the ability to analyze situations more closely, which I use in my job everyday in the Money Management field." Alex challenged the students to think about what makes them different from other candidates when applying for jobs. His takeaway line of the evening was "Make yourself a value-added proposition" for prospective employers. ♦

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**NEW! SHOW YOUR PRIDE NEW!**

The Economics Club is selling IUP Economics T-shirts! You can show pride in your association with the IUP Department of Economics and support the Economics Club at the same time. Shirts are available in crimson (100% cotton) with white print or in gray (90% cotton, 10% polyester) with crimson print and in sizes small through XXL. Each T-shirt is just \$10 plus \$2.50 for shipping and handling (for international shipping see contact information below). The proceeds go to support Economics Clubs activities. You can order by mailing the completed order form and payment to the address below. *Please note: T-shirt purchases are not considered charitable donations and are therefore not tax deductible.*

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Please circle your color and size choice for each T-shirt.

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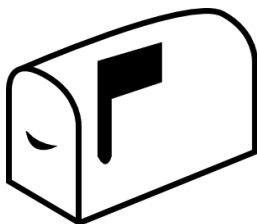
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\*Any address provided here will only be used to mail out T-shirts. If you need to update your mailing information, please use the Alumni Information form.

QUESTIONS? Contact Dr. Jack D. Julian at [jjulian@iup.edu](mailto:jjulian@iup.edu)

**Want it faster?** Send all relevant information and payment via PayPal® to [jjulian@iup.edu](mailto:jjulian@iup.edu). (Credit card may be used for PayPal® purchases only.)



**Our helpful student assistant gamely agreed to model the T-shirt!**

**MEET THE EDITOR, CONT.**

*(Continued from page 5)*

schools before settling here in Indiana, I have friends all around the country; family members as well. I tend to get to Texas and California about once a year; New York City two or three times a year; and Boston, Philadelphia, and DC any chance I get. I also hail from Akron, Ohio, where my parents and a sister still live so I try to get back there several times a semester. I also get around when one of my favorite bands goes on tour. I saw three U2 concerts and about ten Phish concerts over the last year. I have similar plans this summer.



**SJ:** If you were an animal, what kind of animal would you be?

**JJ:** I think I'd like to be a domesticated house cat. I can lie around and act like I'm not interested in anything, but actually finding everything interesting. I can be amused by the simple and mundane. I think that is a common trait among economists: we find elegance in the mundane. Watching and studying

people going about their ordinary business of life is what I do. It seems like cats do that. Realistically, the cat brain isn't all that large so I doubt they ponder peoples' behavior like I would want to do. But they act like it. The life of a house cat seems a little blissful. ♦



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## ALUMNI NEWS

SPRING 2010

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